NOVEMBER 12, 1960
VOL. 159—NO. 20

Telephony®

THE JOURNAL OF THE TELEPHONE INDUSTRY

DOUBLE DELIGHT

Beauty met beauty recently when Miss America, Nancy Ann Fleming of Montague, Michigan, accepted the first Starlite telephone in the state from Len J. Marcil, General Telephone Co. manager in lovely Nancy's hometown.

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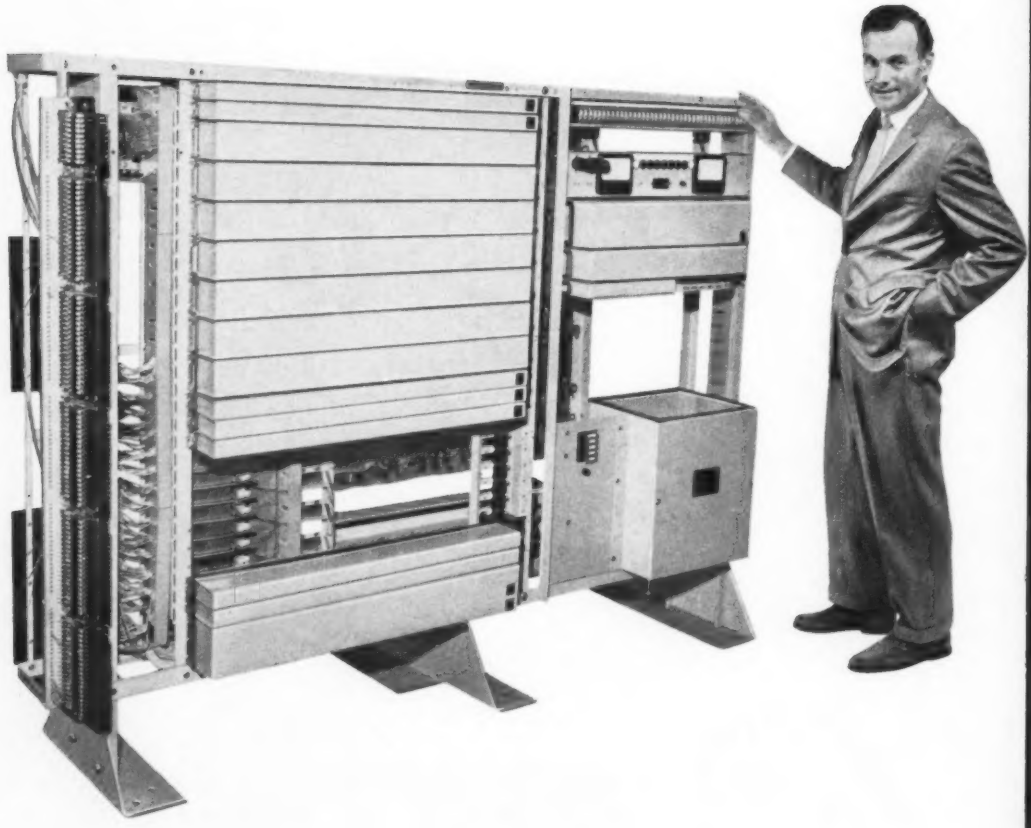

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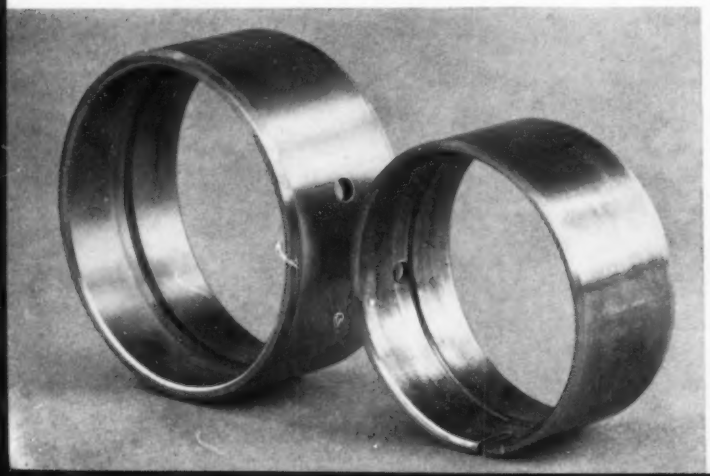

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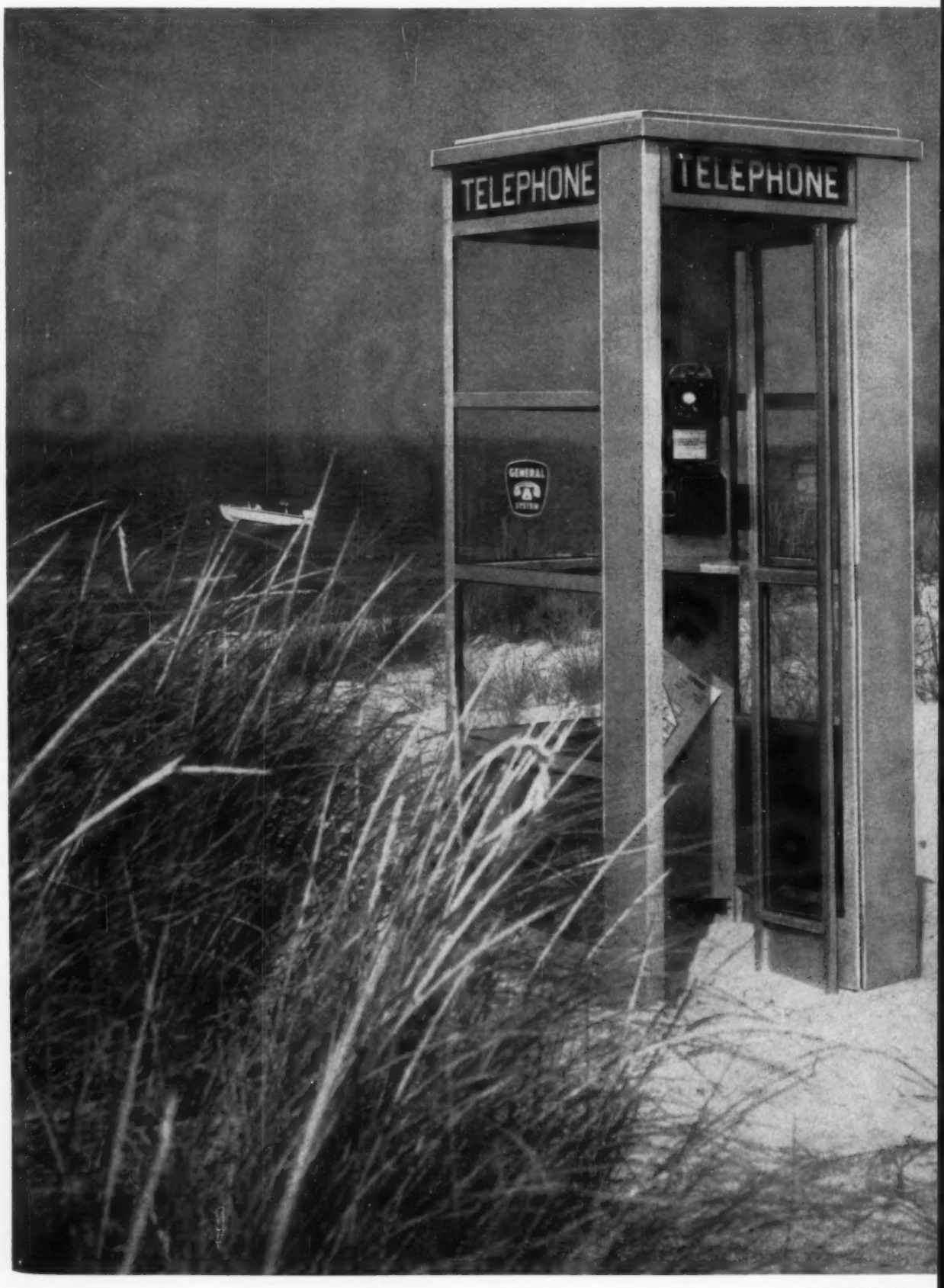
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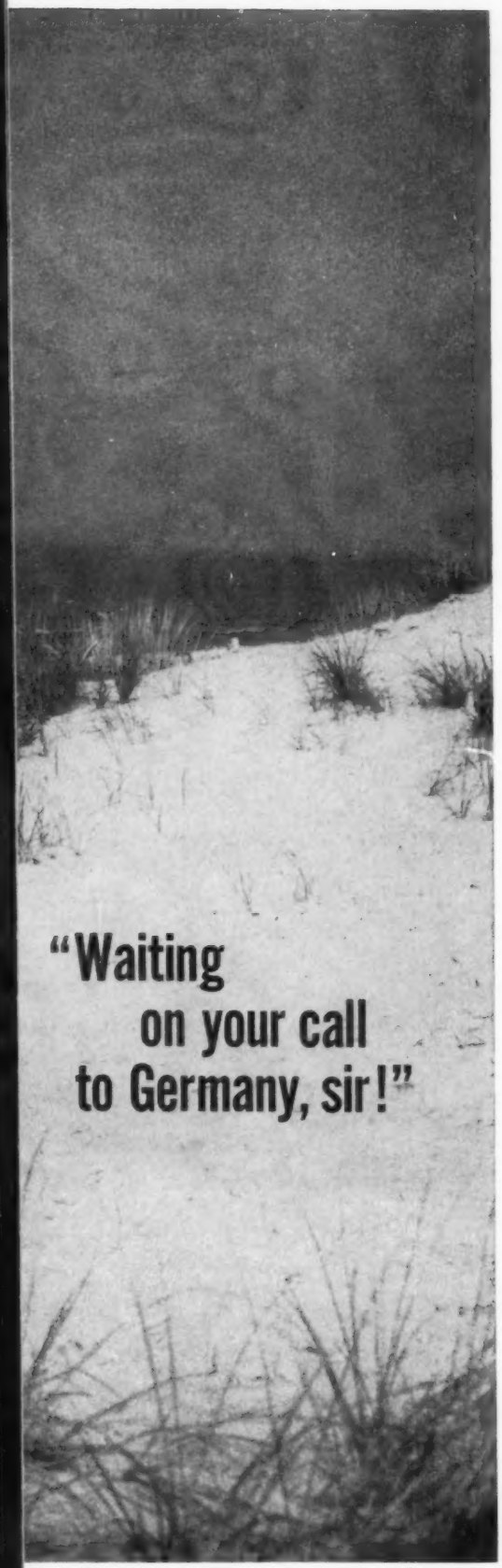

No—Portage, Indiana is not on the seacoast, but on a small stretch of Indiana's inland coast, bordering Lake Michigan. Yet, it's 800 miles closer to Hamburg, Germany, than New Orleans, La., is! And thereby hangs our tale.

Except for sea gulls and great blue heron, beavers and an occasional Boy Scout, the beach near Portage, Ind., is sparsely populated—right now. But not for long. For this is the site of a town-to-be . . . a harbor for ocean-going vessels . . . a steel production center that is expected to employ more than 50,000 people!

General Telephone Company of Indiana already has completed plans for serving Portage Township . . . will spend more than $2 million in the proposed construction and conversion program. And, it is expected, some 3,000 telephone customers will be connected to the new facilities at conversion time.

A significant number of the new facilities will be Alcoa® Aluminum booths. Because Alcoa booths serve so many so well in other locations, GEN TEL decided they will earn high revenue—with low maintenance costs—here, too. Because aluminum defies corrosion, the moist lake air and buffeting, sand-laden winds won't hurt it a bit. And because Alcoa booths are colorful, well lighted and sturdy, they attract users! Easily maintained, dirt and grime may be washed off with plain water . . . and aluminum never needs painting!

For more information about Alcoa Aluminum outdoor booths . . . and the new Alcoa compact aluminum booth, write Aluminum Company of America, 1720-L Alcoa Building, Pittsburgh 19, Pa.

"We chose Alcoa booths because they're light in weight yet sturdy," says Mr. P. E. Platt (left), Northwestern Division manager for GEN TEL. "They require a minimum of maintenance, are well lighted, colorful—and really attract users," adds Mr. J. D. Canfield, GEN TEL's district commercial manager.

ALCOA ALUMINUM

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FLASHES AND PLUGS

IS SHE BEING REPLACED? "Sorry, wrong number." In the housewife's automated future, this will be, not the response of a telephone operator, but the answer if the pot roast is burned. And it will be a perfectly true alibi.

According to Chris J. Witting, consumer products vice president at Westinghouse Electric Co., housewifely routine will be a simple procedure, such as:

Homemaker leaves home for afternoon, but she does so with an easy mind, for she has turned appliances to automatic control. When she decides to cook dinner, she will just dial her home telephone number. Next, she will dial the code connecting her with an ordinary relay box for remote appliance control. Next, she will dial the number of the appliance she wishes to operate. Lastly, she will select the number to start dinner cooking at the desired oven temperature.

Only detail overlooked is a code for having the range call her back when dinner's ready.

•

CHILD OF EARTH. The Associated Press reported recently a true story which possibly is being duplicated in many American homes. John Moore of Wichita, Kan., felt that Echo I, the earth-circling communications satellite, offered a good opportunity for guidance in astronomy for his two sons, Alan, 4, and Jim, 5. He dwelt on the wonders of the heavens, and explained to the boys how one may find his way, if he is lost, simply by spotting the North Star.

"Now," said the glowing parent, "What are you going to do if you become lost?"

His four-year-old quickly replied, "I'm going to call a policeman and tell him I live at 204 S. Hillside."

•

POLESIDE VIEW OF CIRCUS. *The Indiana Bell News* tells the story of C. W. Lowe, its supervisor of motor vehicles, who as a young repairman working in Peru ("circus capital of the world"), was up a pole when a herd of stampeding elephants headed for the Mississinewa River.

Having a ringside seat for this thrilling sight was recalled recently by Mr. Lowe. However, no less exciting to remember was the time a giant boa constrictor escaped. Again, Mr. Lowe was up a pole, and he could see the big serpent sunning itself on a fence row.

On his telephoning the circus, a grateful voice answered. "Thanks! Say, will you watch him for us till we get there?"

"Sure will," was the prompt reply. "I won't get down from this pole till you get here—and I won't take my eyes off him!"

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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY
Since 1901

November 12, 1960

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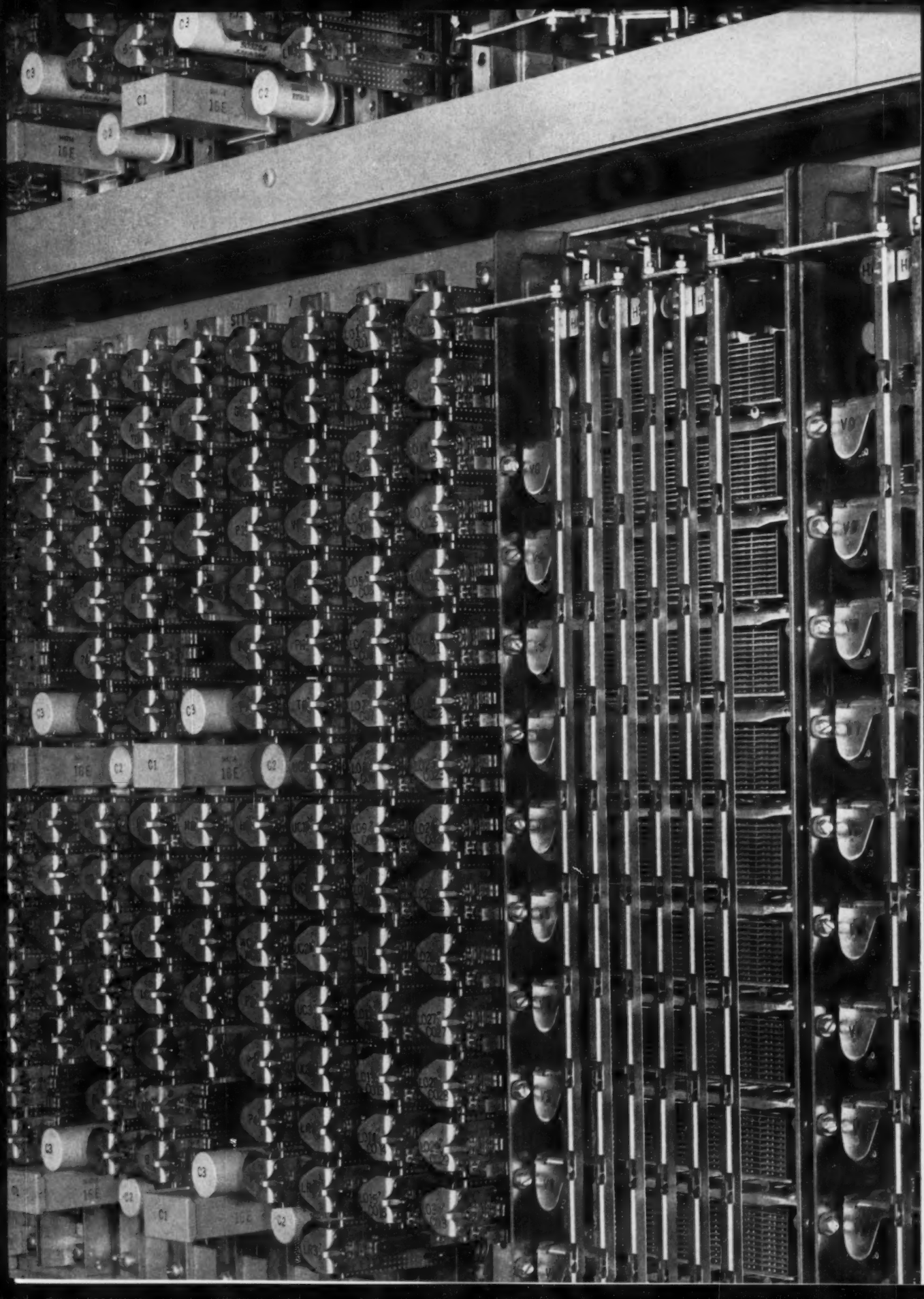

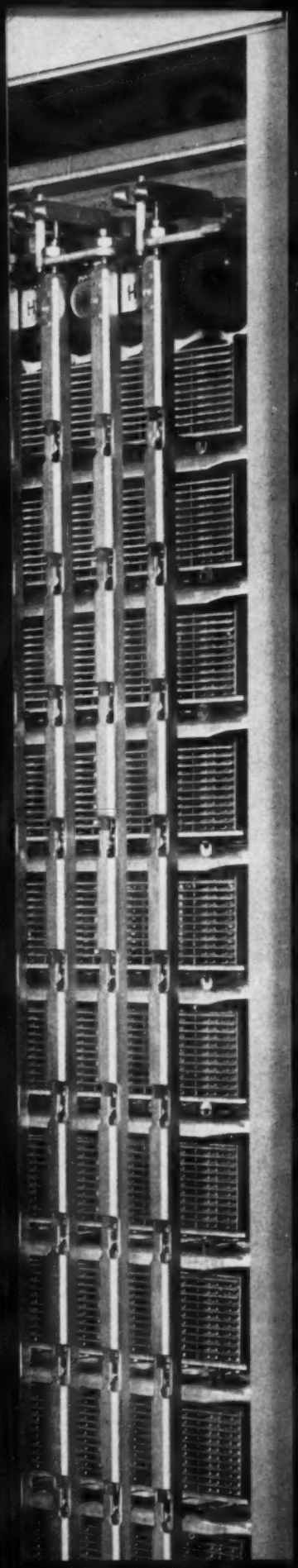

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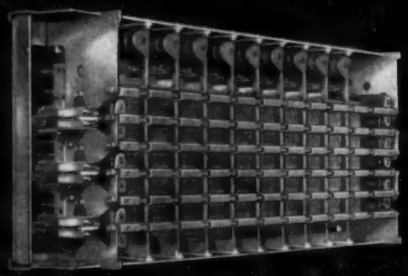

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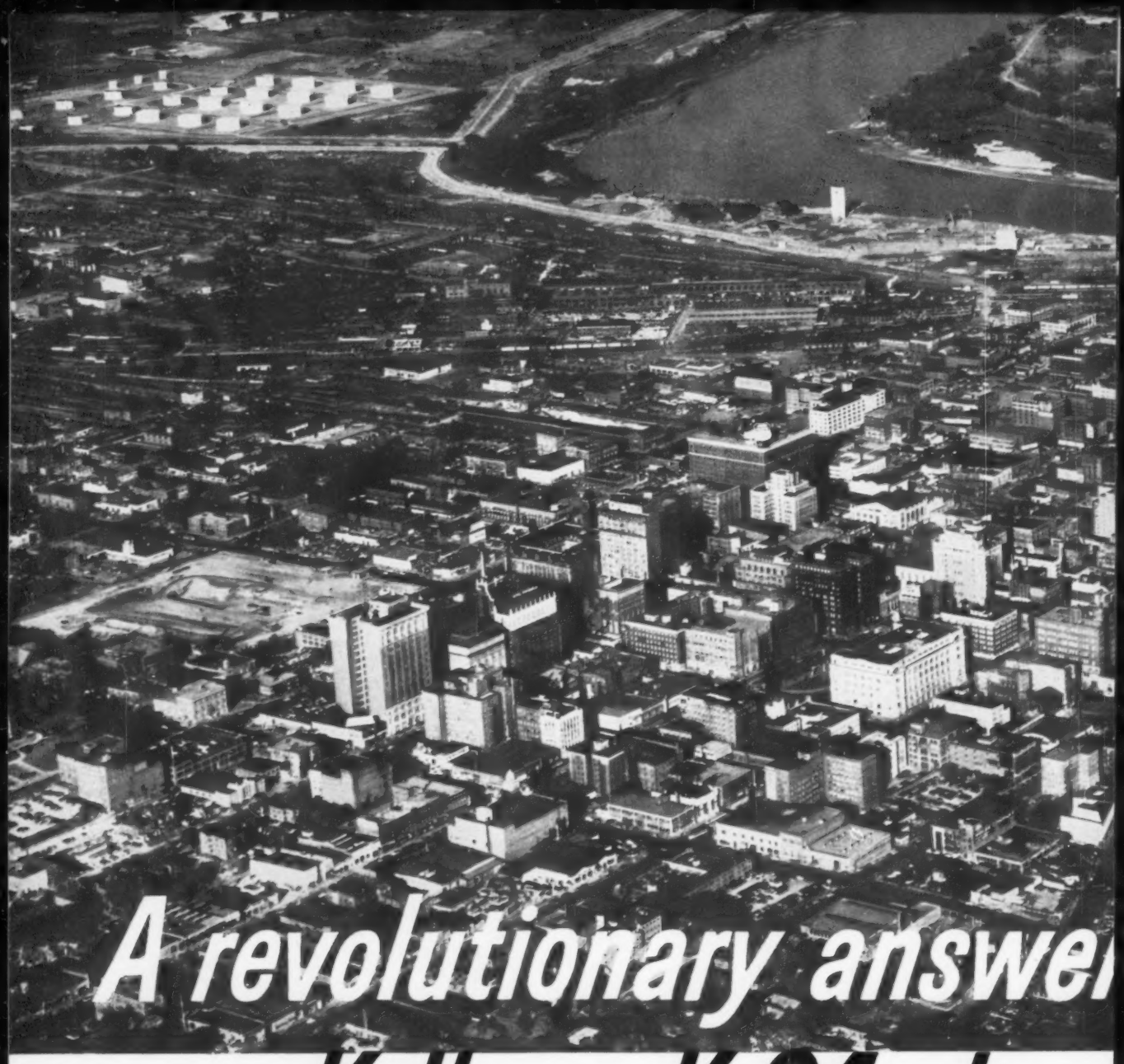

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Rounding out the Kellogg Carrier picture are the K-31 for rural subscriber service and K-32 trunk carrier. Each provides dependable, economical expansion over existing facilities. For complete technical details, fill in the coupon below. At the same time you may arrange for an appraisal of your carrier needs by a Kellogg expert, if you so desire.

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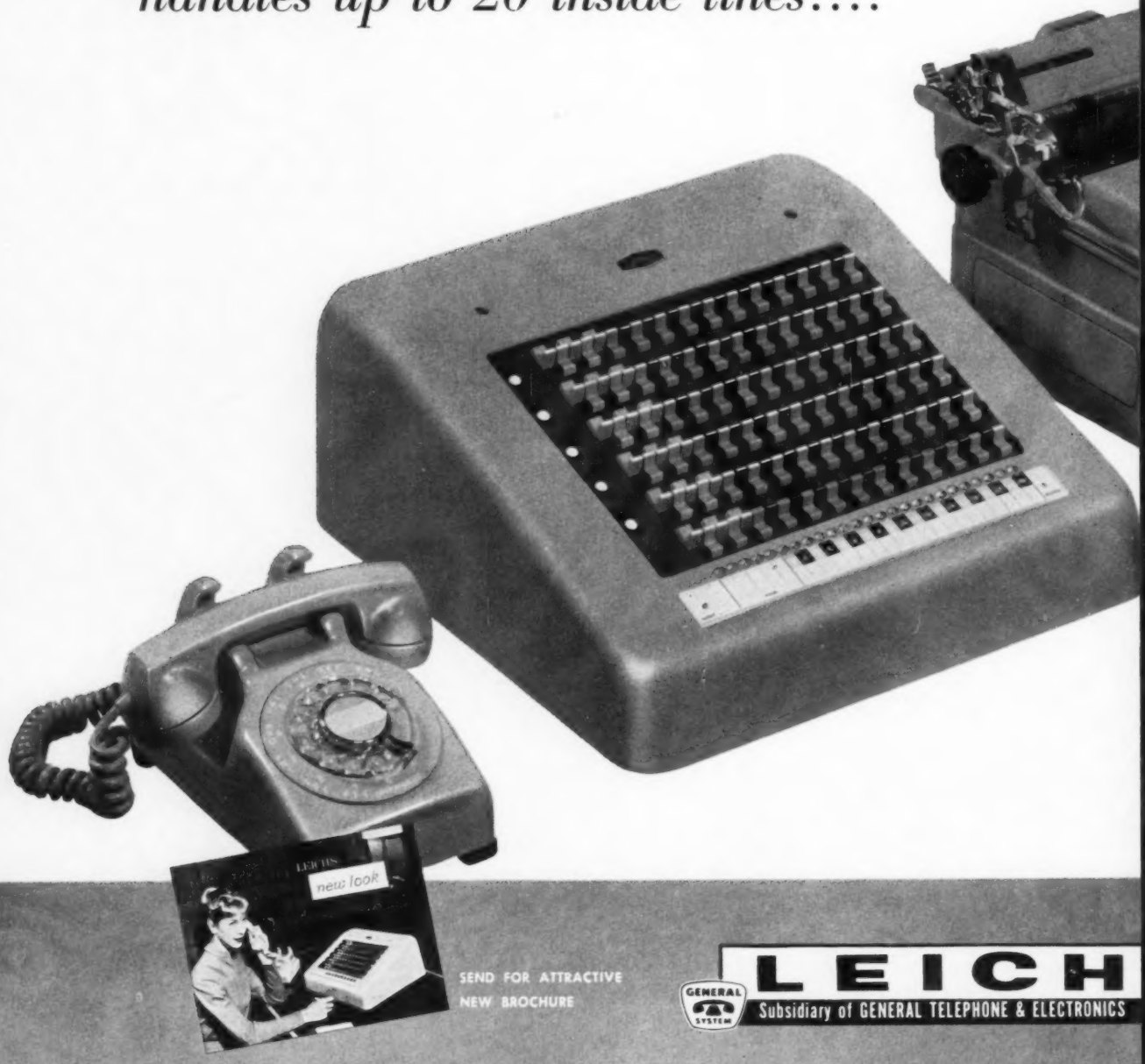

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What could be simpler or easier to handle? Leich's Cordless PBX brings a new concept in style, efficiency and dependability. Any office girl can operate it after a few hours' practice. Perhaps the best thing of all is that Leich's new Cordless handles up to 20 inside lines. This is a real plus in a PBX about the size of an office typewriter. The Leich PBX is truly the new look in business telephone service!

You can offer subscribers excellent delivery because these Leich PBX's are available from stock.

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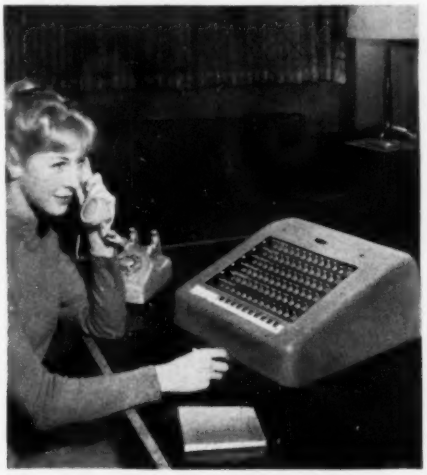
A novel arrangement of colored keys and low, sloping face permits fast, easy extension of calls without reaching or looking up. Keys are color-coded for greater visibility.

Odd numbered station line keys are beige, even numbered black, trunk and operator keys gray.

What's more, each key has only one operative position. This eliminates the confusion of cam-type, two-way keys. To simplify operation further, alternate keys operate in opposite directions.

Supervisory lamps show when a party has disconnected, or is signaling. Busy lamps indicate stations and lines in use.



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The Leich PBX is only slightly larger than a typewriter, 16½" long, 16" wide, 7½" high . . . and weighs only about 47 pounds.

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IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR
AND EDITOR, PUBLIC UTILITIES FORTNIGHTLY

U. S. Supreme Court asked to decide if information given to one government agency by a business concern can be inspected by another agency. Manufacturer proposes UN control over space communications. Telegraphers union opposes Post Office's facsimile mail system . . . Says it will destroy jobs of Western Union employes.

THE U. S. SUPREME COURT has been called upon to determine whether business organizations which prepare statistical material and other data for one government agency —let us say the Census Bureau, or the Bureau of Labor Statistics—have a right to expect that such information will not be open to indiscriminate inspection by other government agencies.

The case before the highest court involves the Federal Trade Commission, which claims the right to see copies which business concerns keep of material they prepare for the census of manufacturers. The commission wants to see the documents to help it prepare anti-trust cases. The business organizations complained that such information is prepared under at least an implied promise of confidence and that it may contain trade secrets or information of value to business competitors.

The Census Bureau is inclined to go along with the view of the business concerns on grounds that unless some confidential protection is afforded the bureau will find it difficult to obtain the cooperation of business organizations in obtaining census information. The Census Bureau is supported by its parent—the Department of Commerce. This is a strange case in which government agencies of the same administration are arrayed against each other. The Justice Department, which has an Anti-trust Division, whose duty it is to prosecute anti-trust violations, backs up the Federal Trade Commission. The Budget Bureau is backing up the Census Bureau.

We can sympathize, therefore, with the position of U. S. Solicitor General J. Lee Rankin, whose job is to act as attorney for all government agencies in appeals before the U. S. Supreme Court. Rankin figuratively threw up his hands in confusion when the case was called up. He told the court about the disagreement among the government agencies and sent along the briefs of both sides without benefit of comment or argument of his own.

The particular case before the U. S. Supreme Court involves the Beatrice Foods Co. of Chicago. But there are other cases in which the same controversy appears and it looks like the Beatrice Foods case may be the guinea pig to test the thinking of the highest court.

Back in 1956, the Federal Trade Commission charged Beatrice Foods with violating the Clayton Act, prohibiting mergers for the purpose of lessening competition in the same line of business. In 1958, the commission subpoenaed copies of schedules of census information which Beatrice Foods had prepared and sent along to the Census Bureau in 1954. The food company refused to produce the data on grounds that they were privileged communications, submitted to the Census Bureau under a pledge of confidence.

The lower federal district court disagreed. It ordered Beatrice Foods to comply with the subpoena, with the stipulation that the documents should be kept secret from the Beatrice company's competitors. Then came the Seventh U. S. Circuit Court of Appeals which reversed the district court on grounds that the Federal Trade Commission's request exceeded its legal authority.

Obviously this is the sort of test case which might involve any kind of a business corporation even including telephone or other public utilities and utility manufacturing concerns.

The particular information which the Federal Trade Commission was seeking in the Beatrice Foods case dealt with the share of the market which the merged concern had or would have after the merger. The Federal Trade Commission complained that the only reliable way to figure the sharing of a market is to compare figures compiled for the census of manufacturers with the total market announced by the Census Bureau. The very fact that many companies refused to cooperate in anti-trust investigations, the Federal Trade Commission says, makes it important that census data be made available for its anti-trust investigation. The U. S. Supreme Court is expected to decide in the near future whether it will review the case.

International Space Controls?

Last week in this department reference was made to the fact that the American Telephone & Telegraph Co. is very serious about seeing that the proposed space communications satellites should be launched and operated under the auspices of private enterprise. One of the difficulties to be encountered in this area, of course, is the fact that only in the United States and Canada, and a few other countries, is the operation and control of the telephone business permitted to remain under private ownership. In most other countries, includ-

ing Western Europe, the telephone business is a government monopoly. And presumably any supplemental international space relay arrangements would have to deal with such government monopolies. That goes double for the countries behind the Iron Curtain if, as, and when they get into this picture.

One way of keeping such national and international relations on an even keel has been suggested in the form of control by the United Nations. On Nov. 3, addressing the Peninsula Manufacturers Association at Palo Alto, Calif., James M. Skinner Jr., president of Philco Corp., called for the adoption of a system by which international space communications would be provided and operated by the United Nations. He said such international control would represent a major step toward global peace and understanding.

According to Mr. Skinner, here is how a global communications system might work utilizing space satellites:

"Messages of all kinds — voice, telegraph, teletype, even television — are brought together in each country through the local communications service to some point — say, the nation's capital. At that point all messages are relayed by satellites to a central receiving point in some other country, there to be distributed through the local service of that particular nation."

The Philco executive pointed out that "The United States now has the opportunity to give a convincing demonstration of its intention to use its technical achievements in space for peaceful purposes and thus bolster its position of world leadership. Noting that America's space communications leadership is usually linked to military purposes, Mr. Skinner asked: "Would it not be a major asset in the court of world opinion if we could demonstrate not only our peaceful motives, but also the use of these developments of ours to provide a service which would be useful to everyone?"

"It seems almost essential," Mr. Skinner warned, "that these satellites be under control of some world body to avoid the opportunity for unscrupulous people to play on the fears and superstitions of less-informed peoples of the world. These worries, concerns, and possible misunderstandings could best be avoided by having the United Nations provide the service, be responsible for the satellites, and guarantee their innocence."

Is Facsimile Mail Socialistic?

Readers of this department may recall from their daily newspapers of Nov. 1 that Postmaster General Arthur E. Summerfield released to the press another spate of publicity about Uncle Sam's new facsimile mail setup. Possibly your local newspapers carried pictures of the postmaster standing over a new style "mailbox" and dropping into it an unstamped letter addressed to President Eisenhower. The stories went on to say that minutes later the letter had arrived at a post office in Chicago. In another few minutes the letter had arrived at Washington, awaiting delivery to the White House.

The letter traveled electronically over the Post Office's new "facsimile" system, which in a few years is expected to make possible overnight first-class mail delivery from any post office in the United States to another. Given its first public trial on Nov. 1, the system worked as follows: The sender writes his letter on a special form supplied by the Post Office. He may type it or write it with any standard material except green ink, to which the automatic scanners are color-blind.

The sealed form is then turned over to a set of machines. The first machine stamps it as to date and time of day, and sorts it according to its destination. Next the letter is broken open and exposed to an electronic scanner. This takes place inside the machine and no clerk can possibly read the message. Microwave relay carries the scanner impulses to more equipment in the destination city. There the impulses are translated on paper into a reproduction of the original letter.

Another device stuffs the reproduction into an envelope, addresses it, and turns it over to a human mail carrier. The letter's contents are hidden from sight at all times.

Two days after this interesting experiment in facsimile mail was conducted, Postmaster General Summerfield got a rather unexpected reaction. It was from the head of the Telegraphers Union. The president of that union protested that the experimental, high-speed mail system endorsed by Summerfield would destroy the jobs of 35,000 Western Union employes.

H. L. Hageman, president of the Western Union Division of the AFL-CIO Commercial Telegraphers Union, asked that the Senate Post Office Committee investigate the impact of the new electronic process unveiled on Nov. 1. Hageman, in a letter to Chairman Olin D. Johnston (D., S. C.) of the Senate Post Office Committee, contended this was a "socialistic scheme" to compete with and destroy the private telegraph industry. The union leader said: "Instead of trying to figure out ways of competing and putting the private telegraph companies out of business,

(Continued on page 60)

Microfilms of TELEPHONY Volumes Available to Subscribers

Many telephone operating and manufacturing companies, as well as public and school libraries, maintain bound volumes of TELEPHONY for future reference. These files entail binding expense and consume considerable storage or shelf space.

As a service to *subscribers*, TELEPHONY has made arrangements to have the entire issues (editorial and advertising contents) of each volume reproduced on a positive microfilm, which can be shown on any standard microfilm reader.

The cost of microfilms is about equal to that of standard library binding of the volumes and the microfilms require a minimum of storage space.

Each film is furnished in long lengths of 35 millimeter positive film, suitably boxed and identified, ready for storage or library files and for use in a microfilm viewer. For those who have microfilm viewers which also make reproduced copies on photographic paper, negative microfilm is available at the same price charged for positive film.

Only *subscribers* to TELEPHONY are eligible to purchase the microfilms. Microfilms for Volumes 154 and 155 (covering the full year of 1958) and Volumes 156 and 157 (for 1959) are now available. The microfilm covering 1958 is priced at $11.15 and price of the film for 1959 is $11.25.

Orders for films covering 1958 and 1959, as well as subscriptions for films for subsequent years, may be placed with University Microfilms, Inc., 313 N. First St., Ann Arbor, Mich. The films will be furnished about six months following the end of the year covered. Before filling film orders, University Microfilms will check with TELEPHONY to ascertain if those ordering are bonafide subscribers.

ABC of the Telephone

by Frank E. Lee

PHANTOM Transposition. A phantom transposition bracket, illustrated in *Fig. 6*, by supporting four insulators vertically, provides a

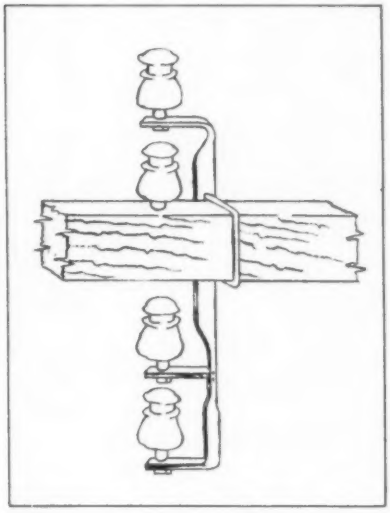

Fig. 6

method of transposing two pairs of wires. Various transposition patterns can be accomplished with this type bracket as follows:

(1) The two pairs of wires can be transposed without changing the relative position of the wires in each of the two pairs.

(2) The two pairs of wires can be transposed and the wires of each of the pairs can be transposed.

(3) The two pairs of wires can be transposed and the wires of either one of the pairs can be transposed.

The purpose of phantom transpositions and the various phantom transposition patterns were discussed at some length in Part 40 of this series (Volume 2 of "ABC of the Telephone").

The individual wires are tied to their respective insulators in making phantom transpositions. The completed transposition depends upon the attachments at the adjacent poles, the same as with tandem and drop type transpositions.

Point Type Transpositions. Carrier circuits operate better if the physical circuit transpositions are made at exact specific locations. Transpositions of this type can be made with point transposition brackets shown in *Fig. 7*. Four insulators are mounted on the steel transposition bracket. Two of the insulators, at opposite corners, are mounted lower than the other two insulators. This provides the clearance necessary for the transposition of the two wires.

The wires have normal or very near normal separation in the spans on either side of the transposition point. This permits placing the transposition at a specific point along the line.

Old and new concepts of tying open wire lines at point transpositions follow closely the pattern for tying at tandem

Part 96. OUTSIDE PLANT CONSTRUCTION—Section 22. Transposing Open Wire Lines.

Section 1. Planning of additions to outside plant (TELEPHONY, Nov. 17, 1956).

Sections 2, 3 and 4. Pole lines and poles (TELEPHONY, Nov. 24, Dec. 1 and Dec. 8, 1956).

Sections 5 and 6. Guy wires (TELEPHONY, Feb. 16 and 23, 1957).

Sections 7 and 8. Anchors (TELEPHONY, Apr. 27 and May 4, 1957).

Sections 9 and 10. New cable facilities (TELEPHONY, Sept. 14, 1957 and Mar. 8, 1958).

Sections 11 and 12. Fastening aerial cable to messenger strand (TELEPHONY, Aug. 9 and 16, 1958).

Section 13. Application of lashing rods, lashed cable supports, and typical aerial cable arrangements (TELEPHONY, Apr. 25, 1959).

Section 14. Self-supporting cable and wiring at aerial cable terminals (TELEPHONY, May 2, 1959).

Sections 15 and 16. Open wire lines (TELEPHONY, Aug. 22 and 29, 1959).

Section 17. Brackets and crossarms for open wire lines (TELEPHONY, Sept. 5, 1959).

Section 18. Open wire lines—use of insulators, and protection during installation (TELEPHONY, Oct. 17, 1959).

Section 19. Stringing open wire lines (TELEPHONY, Dec. 5, 1959).

Section 20. Dead-Ending, Tensioning and Sagging Open Wire Lines (TELEPHONY, Apr. 23, 1960).

Section 21. Transposing Open Wire Lines (TELEPHONY, Nov. 5, 1960).

transpositions. Ties are not required at point transpositions—under older concepts of construction—except when the transposition is at a storm-guyed pole or adjacent to a highway, railroad, or river crossing.

Under new concepts of construction, each wire is tied to at least one insulator at each transposition.

Bracket Line Transposition. Pole brackets have built-in transposition features. The brackets can be positioned on the transposition pole to provide the separation required to complete the transposition.

Assume the brackets are normally placed one above the other on the same side of the pole. The brackets can be placed on opposite sides of the pole—on the same level—at the transposition pole. The brackets may be placed on opposite sides of the pole at regular poles along some pole lines. The brackets can be placed one above the other on one side of the pole at transposition poles along these lines.

Span Transposition. Occasionally the specified location of a transposition is at some point in a span. These transpositions can be made with span transposition brackets, thus eliminating the need of placing an additional pole or of adjusting span lengths to enable every transposition to be made at a pole. This application probably will be used more and more as longer and longer spans are used on open wire lines.

A typical span transposition bracket is shown in *Fig. 8*. As a general rule, these brackets are installed on the wires near a pole and then are pulled into position in the span. Care should be taken not to attempt pulling a span transposition bracket past a splice in the line. The relatively short radius bends in the wire, caused by the moving bracket, may weaken or break the splice. The splice should be cut out and relocated by adding a new piece of wire in the section through which the bracket must be pulled.

Span transposition brackets generally are made of aluminum. They are light in weight and have been used for a number of years with excellent results. Aside from placing transpositions in the correct locations, these brackets enable the operating company to gain the fullest benefit from the savings made possible by long span construction techniques.

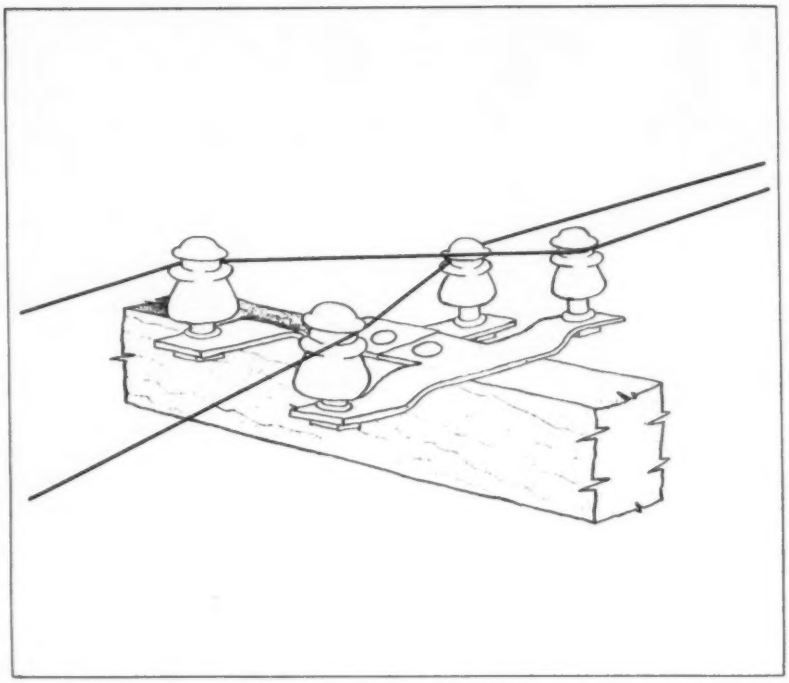

Fig. 7

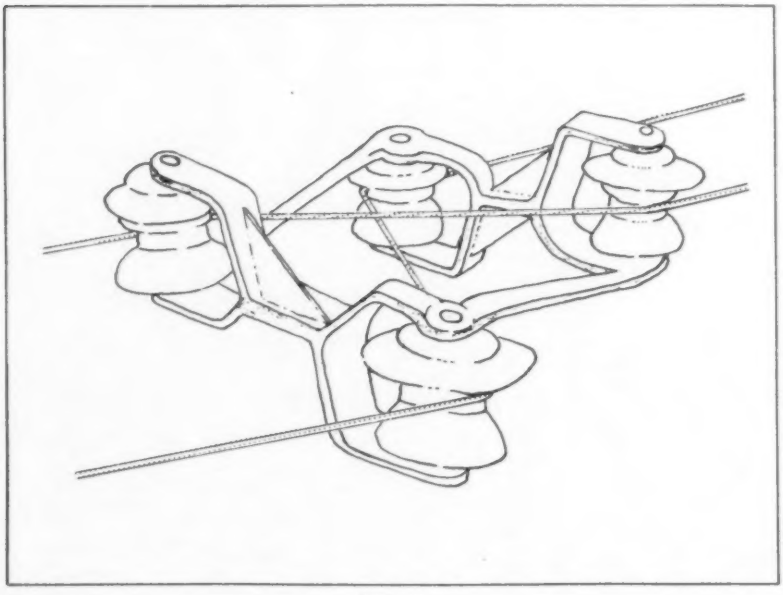

Fig. 8

Types of Transpositions

Transposition requirements are basically the same for every open wire line. However, the type of line—whether exchange, toll, carrier equipped, etc.—has a direct bearing on the degree of transposition which must be achieved. In this respect, a pair of wires must be transposed with relationship to adjacent pairs of wires in addition to the transposition of the two wires in the pair. The transpositions in any given line are repeated at specific intervals. The result is a definite transposition pattern.

Letters and/or numbers have been used to designate transposition patterns. Typical transposition designations are: R1, R2, R1-5, R2-5, R1-6, R1C-5, and R1C-6. Patterns R1, R1-5 and R1C-5 are basically the same with the exception of special patterns at about every 25th pole. In a similar manner, the R2 and R2-5 patterns are alike. The R1-6 and R1C-6 patterns enable 12 wires to be placed on a 10-pin crossarm.

R-1 and R-2 Transpositions. The same basic patterns are used at transposition poles for both the R1 and the R2 transposition systems. The essence of

these patterns lies in the relationship between a pair being transposed and adjacent pairs. Assume a pair is transposed at a given pole. Adjacent pairs on the same crossarm and corresponding pairs on crossarms above and below will not be transposed at the same pole. Both patterns are used primarily for voice frequency operation. Certain types of carrier circuits operate well on lines transposed in accordance with these designs.

Each pair of wires is transposed at every other pole in the R1 design. In a similar manner, alternate pairs are transposed at the same pole. This results in half of the transpositions being made at even-numbered poles and the other half of the transpositions being made at odd-numbered poles.

The R1 design is well suited for long-span construction where span lengths may vary from 300 to 600 feet.

In the R-2 design, each pair of wires is transposed at every fourth pole. Alternate pairs of wires are transposed at each transposition pole, similar to the R1 design. On this basis, the R2 design, requiring only half as many transpositions as the R1 design, is used primarily on pole lines where the span lengths average less than 200 feet.

The R1 and R2 designs are easy to install without detailed plans. Both patterns can be used for any number of circuits on crossarms or for two circuits on pole brackets. Existing pole numbers can be used to apply either design. Arbitrary numbers can be assigned to the poles along a line if the poles are not numbered consecutively, or if the existing numbering system would conflict with the orderly application of the transposition pattern.

Branch circuit lines can be transposed as separate units without attempting to maintain the relationship of the pairs on the main line.

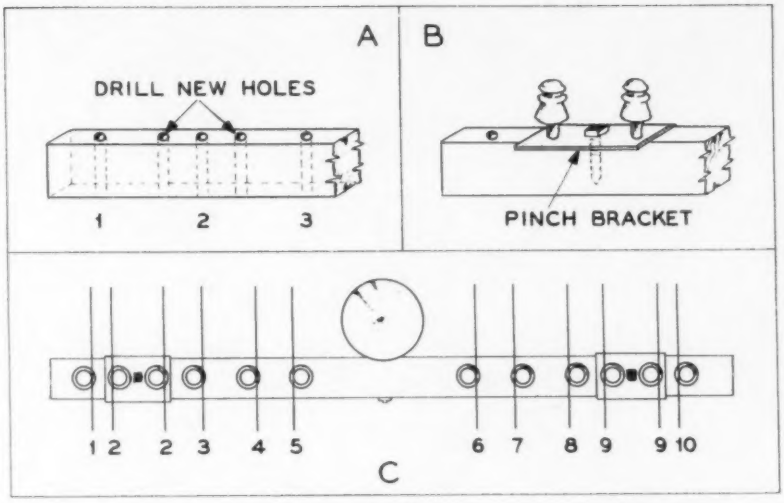

Fig. 10

R1-5 and R2-5 Transpositions. The R1-5 design is the same as the R1 design except for the location of the transposition brackets. In the R1 design the brackets are located at crossarm pin positions 2, 4, 7, and 9. In the R1-5 design the brackets are located at crossarm pin positions 1, 3, 8, and 10. Brackets for the pole pair are located at pins 5 or 6 in both designs.

The R2-5 design is the same as the R2 design except for the location of the transposition brackets. In the R2 design, the brackets are located at crossarm pin positions 2, 4, 7, and 9. In the R2-5 design, the brackets are located at crossarm pin positions 1, 3, 8, and 10. Again brackets for the pole pairs are located at pins 5 or 6 in both designs.

The R1-5 design provides transpositions at every other pole. The R2-5 design provides transposition at every fourth pole. Actually, every second pole in the R2-5 design is a transposition pole. Thus, transpositions occur at every even-numbered pole. One-half of the circuits are transposed at poles with numbers divisible by four. The other half of the circuits are transposed at even-numbered poles with numbers not divisible by four. The remaining two odd-numbered poles in each group of four are straight line poles.

R1-6 Transposition. The R1-6 transposition design, similar to the R1-5 pattern with transpositions at every other pole, permits placing 12 wires on a 10-pin crossarm. This pattern can also be used to place eight wires on a six-pin crossarm. The extra pair of wires is installed on transposition brackets mounted at pin positions normally not used with the R1-5 design. Mounting space is available for the extra brackets because transpositions are made at every pole.

Transpositions in any one circuit in the R1-6 design repeat at every other pole. The pattern for odd-numbered poles repeats at all odd-numbered poles. Similarly, the even-numbered pole pattern repeats at all even-numbered poles.

A typical section of a pole line transposed in accordance with the R1-6 design is shown in *Fig. 9*. Twelve wires are carried on the line. However, the wire numbers correspond to the number of the pins on which they are carried. For this reason, there are two wires numbered two and two wires numbered nine.

The R1-6 transposition pattern is used on open wire lines with long spans ranging between 300 and 600 feet. This is a general rule for practically any of

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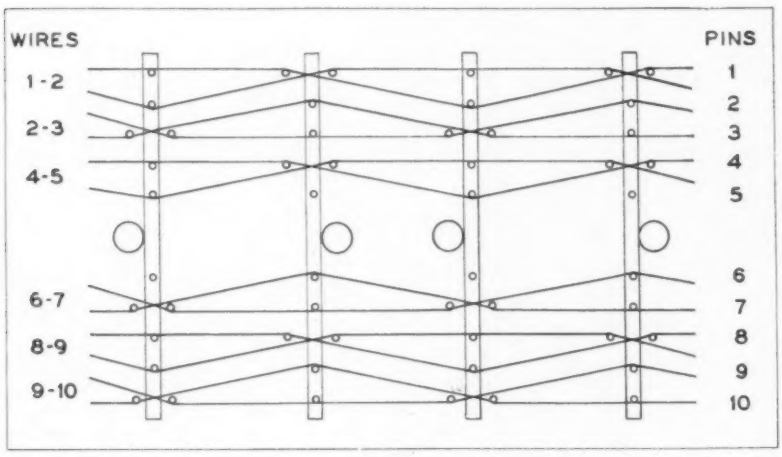


Fig. 9

Nation's Largest Data-Phone System

THE NATION'S largest data communications network of its kind is being installed by Hardware Mutuals-Sentry Life Insurance Group.

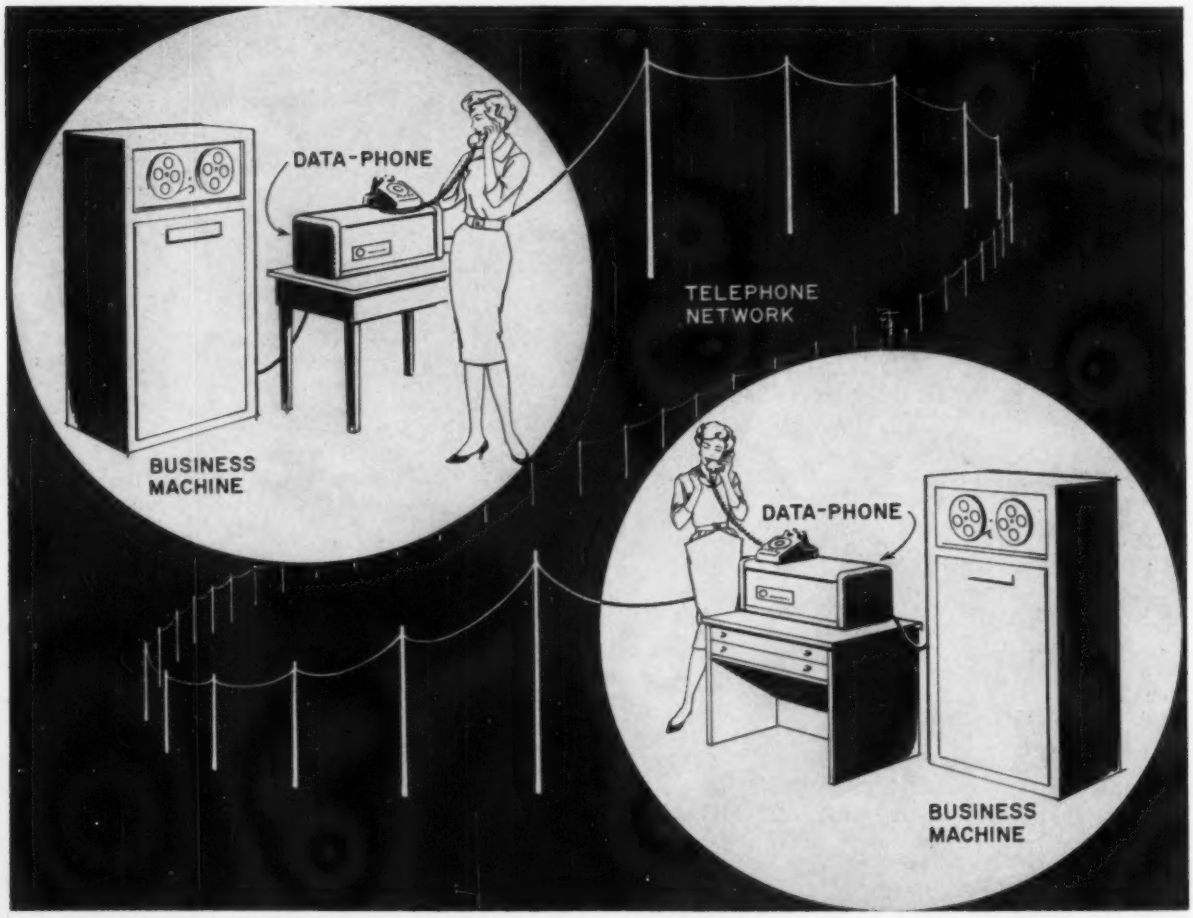
Utilizing the Bell Telephone System's Data-Phone method of transmission over the regular telephone network, Hardware Mutuals-Sentry Life are linking their headquarters in Stevens Point, Wis., with 32 branch offices throughout the country. The installation will be completed by the end of the year.

James P. Jacobs, president of the insurance group, said that the installation will facilitate greatly expanded growth which is expected to double the gross business of the nation's sixth largest mutual property-casualty insurance group within the next decade.

Business machines talking to each other over the telephone will help to cut the time normally required by the insurance group to provide complete customer service from "up to two weeks to less than two days," Mr. Jacobs said.

"Our new arrangements for transmitting and processing insurance data in a fraction of the time previously required will enable Hardware Mutuals-Sentry Life to greatly speed policyholder service, reduce operation costs by more than one million dollars annually and effect an important increase in investment income," Mr. Jacobs said.

"Our insurance underwriting has doubled in volume in the last 10 years and we realistically expect it to more than double again within the next seven



In a typical Data-Phone system compact Data-Phone sets are placed between the business machine and the telephone at both the sending and the receiving locations. A telephone call is made between offices, a switch is flipped and the machines "talk" to each other over the telephone. Bell System experts predict that as time goes on, the amount of communication between machines in different cities will be as large as the amount of communication between people.

to Serve Insurance Group

Harvey J. McMains, AT&T administrator of Data-Phone service, shows the inside workings of one of four types of Bell System Data-Phones.

to 10 years," Mr. Jacobs said. "Because of the high cost of paperwork and the handling of information among widely scattered points, we are undertaking a complete modernization of our data processing and transmission procedures to place us in a stronger competitive position for attaining our growth goals."

"While improved policyholder services and lower administrative costs are our prime objectives through the combined use of IBM equipment and Bell System Data-Phone, we will benefit from greater efficiency and speed in obtaining current marketing, claims, underwriting and financial information for management decisions," the Hardware Mutuals president said.

"Now, our new data processing center will produce complete daily operating statements for Hardware Mutual Casualty Co., Hardware Dealers Mutual Fire Insurance Co., and Sentry Life Insurance Co. in 17 minutes," Mr. Jacobs stated.

The insurance companies will utilize a total of 36 Data-Phone sets, making this the largest Data-Phone installation in the nation serving business.

Four Data-Phone sets will be installed at the companies' Stevens Point data processing center and 32 Data-Phone installations will link the companies' major offices.

"Our new Sentry Life Insurance Company, which began individual sales operations in January, is the first company to plan its entire operations around electronic data processing," Mr. Jacobs said.

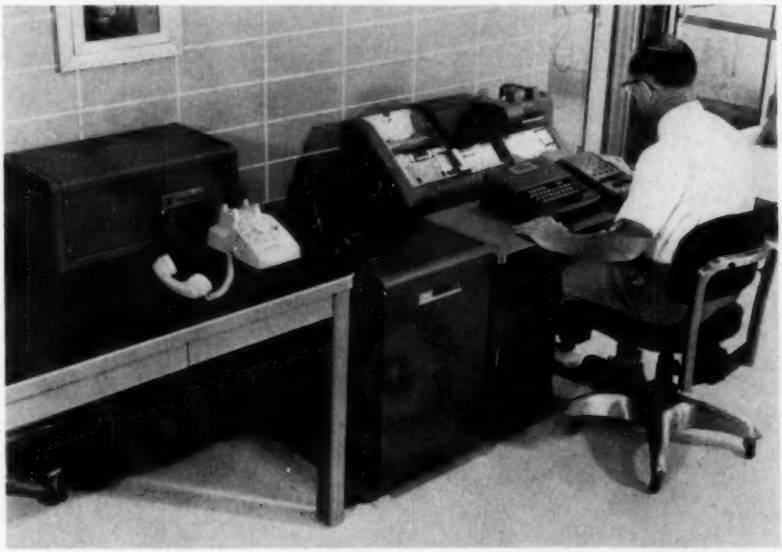
R. H. Deck, Hardware Mutuals vice president in charge of data processing, explained that the Bell System Data-Phone service and IBM equipment will send complete details on new auto insurance applications, premium payments and policy changes into the center over regular telephone lines at speeds equivalent to more than 100 words per minute.

Policy records formerly stored in voluminous "live" files in district and home offices will be filed instead on magnetic tape for easy access for premium billing, policy renewals or customer service inquiries. The electronic computer, one of the first IBM 7070 transistor installations in private industry, will scan every private passenger auto policyholder's record every 24 hours. It will record address changes, new car purchases, premiums paid and claims payments. Up to date information cards for customer service files will be Data-Phoned to branch offices daily. Rates will be verified and new auto insurance policies issued overnight.

New insurance policies will be in the mail within 48 hours from the time car owners sign applications, Mr. Deck said. "Annoyances due to slow manual and mail handling of policyholders' premium checks will be virtually eliminated."

"Our insurance companies are shifting from hand methods to electronic automation with no personnel layoffs," Mr. Jacobs said. "New jobs created by expanding business, and normal clerical

(Continued on page 26)



Punched cards containing information on policy applications are duplicated instantly by an IBM Transceiver (right) in the Hardware Mutuals-Sentry Life data processing center in Stevens Point, Wis. Bell System's Data-Phone (left) converts audible sounds, transmitted by ordinary long distance telephone calls from branch offices, to electrical pulses which operate the Transceiver. Present equipment handles about 10 completely punched cards per minute. Charge for Data-Phone transmission is identical to rates for ordinary telephone calls. Users pay only for the actual time involved.

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FORD Econoline TRUCKS

*Based on a comparison of latest available manufacturers' suggested retail delivered prices.

ALL-THE-WAY NEW TO SAVE IN 4 BIG WAYS!

New Van

Turn an Econoline Van loose on your route and watch delivery costs plummet! Cargo space is up to 57 cubic feet bigger than conventional ½-ton panels! Big double doors at both rear and curb side give real load accessibility! Floor is level, too—no rear engine hump! And there's three feet less length to turn, park, or garage!

New Station Bus

Nothing can match this beauty for comfort, room, and low costs! There's room to spare for eight. Converts to load hauling in just a few minutes. And what a load—twice that of the "biggest" station wagons! Best yet, it gives you up to 30 miles on a gallon, and it's priced below even compact station wagons!*

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Meet a revolutionary new pickup that saves more ways than any truck you've known! Modern cab-forward design pares away over a thousand pounds of dead weight, yet you get as much payload capacity as many standard ½-tonners! It's three feet shorter over-all, yet there's a big 7-ft. box with 73 cubic feet of loadspace! You get lively performance in a proven Falcon Six that can give up to 40% better gas mileage . . . saves up to $215 a year! And, the best news, it's priced below many standard ½-tonners!* See it at your Ford Dealer's!

1. **Low price!** Save from the start with Ford's traditionally low prices!
2. **Up to 30 mpg!** In certified tests, the Econoline Pickup delivered 30 mpg . . . you can save as much as 40% on gas!
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FORD TRUCKS COST LESS

YOUR DEALER'S "CERTIFIED ECONOMY BOOK" PROVES IT FOR SURE!

FORD DIVISION, *Ford Motor Company*

personnel turnover, exceed the actual rate of technological displacement by the data processing system."

"The Data-Phone concept of text and data transmission over the regular telephone network is one of the most significant and far-reaching business developments of the computer age, establishing a new milestone in communications leadership for the Bell Telephone System," R. F. Landry, assistant vice president of American Telephone & Telegraph Co., said in commenting upon the Hardware Mutuals-Sentry Life installation.

"Never before to such a degree have the requirements of industrial progress and national defense required the ability to transmit volumes of data so swiftly and accurately," Mr. Landry points out.

Linking different locations together over regular telephone lines, Data-Phone enables business machines to talk with each other in much the same way that humans do. Now, business machines can instantly receive, process and store information transmitted via Data-Phone from other machines. Connections are put through as simple telephone calls. Data-Phone converts the signals from business machines into a form which can be sent over the telephone network. Even the largest, high-speed business machines can exchange information in this way.

"The age of data processing has just begun," says Frederick R. Kappel, AT&T president. "I predict, as time goes on, that the amount of communication between machines in different cities may be as large as the amount of communication between people."

The Bell System has made more than 1,000 installations of Data-Phone sets in the past two years. It expects to have 10,000 in operation by the end of 1961, and up to 200,000 Data-Phone sets functioning by 1965.

Any type of data in any machine language—including handwriting and diagrams—can be transmitted by Data-Phone at low or high speeds, from and to any place where there is a standard telephone. This makes Data-Phone especially useful in handling accounting and billing information, invoices, inventories, sales orders, payrolls and other forms of business data.

For example, using a relatively low speed Data-Phone set, a big supermarket's entire inventory of some 7,000 items can be sent in about eight minutes. The same list in printed tabular form (single-spaced) would be about 100 feet long and take hours to read over the telephone.

In a typical system, compact Bell System Data-Phone sets are placed between the business machine and the telephone at both the sending and receiving locations. These locations could be next door or at opposite ends of the nation. Data is transmitted from one machine to another with the flip of a switch after a regular telephone call is placed to the receiving station.

This highly flexible system now carries up to 1,200 *bits* per second or roughly 1,600 words per minute. It handles information from any media such as punched cards, paper or magnetic tape—even handwritten messages and diagrams.

Data-Phone sets receive information in the form of electrical pulses or *bits* from the originating machine and convert the pulses to tones suitable for telephone circuit transmission. At the receiving end, Data-Phone sets convert these tones back to electrical pulses which feed into business machines, teletypewriters or other equipment.

Data-Phone 100

The Bell System, thus far, has available four different Data-Phone sets—Data-Phone 100, Data-Phone 200, Data-Phone 400 and Data-Phone 600. Each has been especially designed to work with various types of business machines and transmit at speeds varying from 75 to 1,200 *bits* per second, which is roughly the equivalent of 100 to 1,600 words per minute.

This basic equipment, developed by the Bell Laboratories in 1958, has a top speed of 100 words per minute (75 *bits* per second) and can be used on a one or two-way basis. Business machines currently available to work with it include Bell System No. 28 Teletypewriters, Friden Teledates and RCA Low-Speed DASPAN. These are all punched tape machines.

Using Data-Phone 100, American Savings and Loan of Detroit receives daily payment information instantly from its six local and suburban branches. Burroughs Sensimatic machines located at teller counters record all transactions on eight-channel paper tape.

During the day, tellers send data to the main office by using Friden Teledata tape readers connected to Data-Phone. The bank previously used motorized messengers which was slower and costlier.

Teleticketing, a Bell System service developed to speed procurement of airline tickets, also works with Data-Phone 100. An airlines ticket office employe telephones an airline customer, connects her teletypewriter to the line and inserts a tape containing ticket details. These are typed on a ticket form in a receiving machine in the customer's office.

More and more large companies are using this method of obtaining tickets quickly and accurately, thereby eliminating the need for special messengers. The use of Data-Phone 100 also has various other business adaptations for connecting branch offices together in a data-transmission network.

Data-Phone 200

Data-Phone 200, with a current capability of approximately 1,600 words per minute (1,200 *bits* per second) is

(Continued on page 65)

Creative Capital

"The nation's heritage of thrift holds both the hope and the promise of future material and cultural progress. The billions now invested in American industry are evidence of the savings of individuals who learned the elements of thrift in childhood. The even greater sums required for future advances must come, too, from individuals, from the tradition of thrift.

"The story of creative capital has always been, and must continue to be, a story of individuals. Just as the key factor in projecting future living standards is the rising output of individual workers, the critical element in capital creation is the individual saver.

"Only if he has faith and opportunity will the saver provide capital to finance the future. He must have faith that there will be an environment favorable to creative capital, faith in the same free society and economy which have enabled the U. S. to turn its rich resources into a standard of living unparalleled in human history. And he must have the opportunity to earn a return commensurate with the degree of risk.

"Given these, the horizons of creative capitalism are unlimited."—*From a booklet published several years ago by E. I. du Pont de Nemours & Co. entitled "The Story of Creative Capital."*

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NOW USE RESIN WITHOUT MIXING, SKIN CONTACT OR CLEAN-UP!

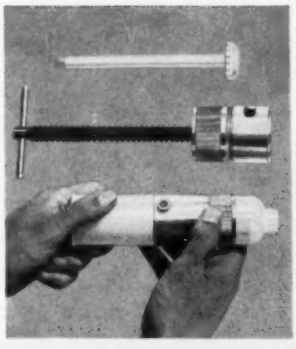
This amazing new invention ends your plugging problems forever! It enables you to apply resin to pressurized cables without chance of incorrect proportioning or touching resin to skin. Applicator never needs cleaning. Here's how it works: two-component epoxy resin is prepacked in handy plastic Disposable Cartridge. Mixing takes place *inside* the cartridge in exactly the correct proportions every time. It's absolutely foolproof. Many telephone operating companies are now using this simple, modern, efficient new method. Learn *today* how it can reduce *your* costs. Write for full details.

OPERATION:

Equipment consists of LD-755 Injection Gun and choice of two sizes of Cartridge—LD-6 (6 oz.) or LD-2 (2 oz.). Two-component Devcon-D Cable Plugging Compound is prepacked in Cartridges.

1. Remove tape clinch band from Cartridge.
2. Rotate dasher rod until material is completely mixed.
3. Remove dasher rod and insert Cartridge in Injection Gun for application.
4. Attach fitting to cable and eject resin.
5. Remove Cartridge from Gun and discard.

(Patent No. 2,838,210. Others Pending)



◀ Disposable Cartridge Contains Resin

LINDSAY TELEPHONE SUPPLY COMPANY

360 E. HIGHLAND ROAD NORTHFIELD, OHIO

the Woman's Place

by Dianne P. Drucker
and
Helen Hardin
Associate Editors

PUBLIC RELATIONS for a telephone company seems to have an infinite number of facets. One that isn't often thought of is the part that relatives of telephone people—such as wives, husbands, mothers, children—play in a small community in rounding out the picture of how subscribers see their telephone company.

The telephone company tries to be a responsible and contributing citizen of a community and this image is strengthened when relatives, as well as telephone people themselves, give time to local improvement.

One such person who has been active in community affairs is Mrs. Helen Stewart, wife of H. M. Stewart, owner of the Standard Telephone Co., Cornelia, Ga., who has won the gratitude of many of her fellow townspeople for her 12 years of service as secretary of the Cornelia Chamber of Commerce. She was honored recently in a story which appeared in the Gainesville (Ga.) *Daily Times.*

Retiring so that she can spend more time with her husband, who travels to the 10 exchanges making up the Standard company, Mrs. Stewart started in 1948 when the Chamber was reactivated after it had been discontinued during the war.

Originally she was told that a volunteer worker was needed to run a small office and answer the telephone for about two hours a day.

However, the short hours only lasted her first week. From then on, it became a full-time job.

Helen Stewart found the work a challenge. With the new organization numbering only 38 members, she set out to increase membership. Today there are 135 members.

Also needed, she felt, was a goal towards which to strive.

To reach it, she did things like answering letters that the post office and mayor's office didn't have time to handle, for Chamber of Commerce work is essentially a public relations operation.

In 1950, her chamber's board of directors sent her to the University of North Carolina for a summer course, and in 1953, she was graduated from the Southeastern Institute for Chamber of Commerce executives at the university.

She was retained as a member of the faculty, teaching civic affairs, the next summer.

Active in chamber affairs state-wide, Mrs. Stewart has served as regional director, secretary and treasurer, and vice president of the Georgia Chamber of Commerce Executives Association.

HELEN STEWART

Currently she is also a member of the Three Arts Club, High School and Elementary School PTA (although her children are grown) and the Cornelia Woman's Club which she helped to organize.

A native of Alabama, Helen is a graduate of Alabama College at Montevallo with a degree in business administration.

She is the mother of two. Her daughter, Helen Kay, is now Mrs. Dean C. Swanson, whose husband is a lieutenant in the Air Force in the Philippines. Howard Milton Stewart Jr. is a senior at Georgia Tech.

Mrs. Stewart says, "I am proud of my town, and of the people in it. It has done things that are better than others. The best things I seek to make better. The worst things, I should help to suppress. Take it all in all, it is my town and it is entitled to the best that is in me."

Although she has received very little financial remuneration for her work, Mrs. Stewart feels the work and association with so many interesting and wonderful people has been reward enough.

"At this time, the chamber is on a sound financial basis, and fairly solid footing all around. I feel that now is the best time for me to retire to housework," she said.

Comic Old Man

"Worry is an old man with bended head—carrying a load of feathers which he thinks are lead."—*The Co-Operator*, July, 1960, published by Employers Casualty Co.

ACHIEVERFONE

built for reliability

Regardless of weather conditions, temperature extremes or the amount of usage, AChieverfone by AC continues to provide reliable communications long after other mobile phones have failed!

Careful design and punishing engineering tests have proven AChieverfone reliability. For example, the transmitter drivers and final are in a box cooled by a cast heat sink at the end of the R-T unit. This means that AChieverfone operates at about 18°C cooler than comparable models. Furthermore, special perforations allow convection cooling of the power supply as well as radiation. In fact, AChieverfone has operated at a 5 minute transmit—15 minute receive duty cycle at 55°C for over 1,500 hours without failure.

Consider AChieverfone for your customer's vehicles. Reliability, fast installation, low initial cost and other features make it the best common carrier mobile phone available today.

SPECIFICATIONS—FCC Type Accepted

Transmitter: 144-174 Mc
4 channel
RF output: 22.5 watts into 52 ohm load
Receiver: 144-174 Mc
4 channel
Wide Band (60 kc) or Narrow Band (30 kc) models available (Wide Band quickly converted to narrow by substituting IF filter)
Frequency Stability: within 0.0005%
Selective Signaling: 51,000 five-digit (compatible, 2-tone sequential) codes available
Size: Receiver-Transmitter, 21⅛" x 8⅞" x 6¼"
Weight: 35.5 pounds, including receiver-transmitter, control head and cable.

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Another Versatile Product of

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THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITORIAL DIRECTOR

FREQUENTLY arguments are heard as to whether or not air-conditioned communication buildings should be equipped with windows. Some maintain that workers within a building—if they are to remain contented—must be able to look out a window occasionally. If this privilege is not provided, they say, workers worry about the weather, as well as other things that may be happening on the outside.

In this connection, the writer visited a large communication installation recently that appeared to disprove these theories. The installation was housed in a large building without a single window.

The complete interior was well lighted by florescent fixtures recessed in the ceiling and covered with frosted glass. Lighting was soft, even, and diffused. The ceiling and walls, down to about three feet above the floor, were covered with acoustic tile. The floor covering was a good grade of plastic tile. Colors were restful to the eye and the air-conditioning was ideal. A public address system was being used to provide soft background music.

The workers in this installation appeared contented and happy, and were, from all indications, doing a good job. They obviously did not miss the windows, nor did they indicate any interest in what might be happening outside the building. It would be possible to give the workers a weather report on the public address system at certain intervals, if considered necessary. In fact, at the time we visited this modern installation, the first game of the World Series was on the PA system.

•

In Philadelphia, recently, we observed workmen making use of precast concrete collars to build up manhole covers to street level.

This arrangement certainly permits a considerable savings in labor and time over the conventional method of using bricks for this purpose. These concrete collars are of proper circumference and about the same thickness as brick. One or more collars may be used, as required.

•

Distinctively marked "Emergency," fire and police telephones are becoming a familiar sight on street corners in towns and cities throughout the country. Because of the important service they provide in the protection of life and property, these telephones are proving extremely popular.

These systems make available to all citizens of a community a rapid and reliable means of reporting fires, accidents, and other civil emergencies.

It is believed that all operating telephone companies would be well advised to promote this service in their particular area.

•

Photography is now claimed to be this country's No. 1 hobby. Some 50 million Americans now snap pictures which is 10 times the number who play golf. Some 20 million purchased fishing licenses and 15 million bought hunting licenses.

•

We have a letter from R. L. Anderson, plant construction administrator for the General Telephone Co. of California, in which he refers to an item on this page in the Aug. 27 issue regarding the desirability of a plastic guy guard.

Mr. Anderson tells us that his company has developed a plastic guy guard that is being manufactured for them by a company in Los Angeles. The plastic being used is Geon 2 and is light gray in color. Observations and evaluations to date indicate that the plastic used in this guard should have a long life, even though it is not black.

We are also advised by Max A. Lekson, of Preformed Line Products Co., that they have a plastic guy guard that has been under field test for several years now, and there is every reason to believe that it is entirely satisfactory. Plastic guy guards of gray and yellow have been tested by his company and a green one is being considered.

When you stop at a motel for the night, some managers will make a reservation for you in a distant city for the next night. These reservations are made either by teletypewriter or telephone.

We have received information that in certain cases, motels will call another collect to make the reservations. If space is not available, the called motel will refuse the charges. This saves the cost of a call that would not serve any useful purpose to the motel, but is a loss to the telephone company. At this time, however, there does not appear to be any remedy for this abuse.

•

The United States Government is the Bell System's largest telephone user. The Chesapeake & Potomac Telephone Co. in the nation's capital furnishes over 192,000 telephones for government offices.

Nearly 500 workers in the installation and repair department made over 175,000 premise visits to government extension users to install, rearrange, or repair telephone service during 1959. These men also moved, or installed 75,000 telephones during this period.

•

It is reported that Americans added one dollar to their personal indebtedness for every 62 cents saved during 1959.

•

It is said, change is not made without inconvenience, even from worse to better.

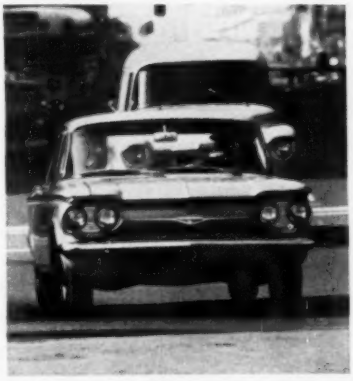
NOW reduced prices make it even thriftier!

'61 CHEVY CORVAIR

Keeping costs down is a fine art with most businesses—and nobody's more aware of it than Chevrolet. Which is why we've come up with some important news about Corvair for 1961.

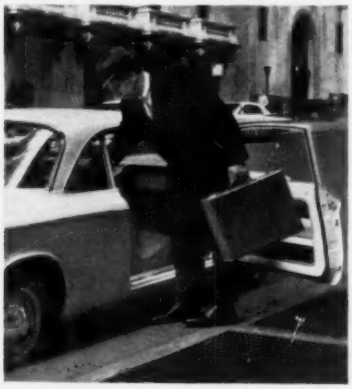
To begin with, prices have been reduced on all coupes and sedans. (Your dealer will be glad to tell you exactly how much.) Enough said.

What's more, a new rear axle ratio, quicker-than-ever cold-start warmup and other improvements help make Corvair a more practical buy than ever.

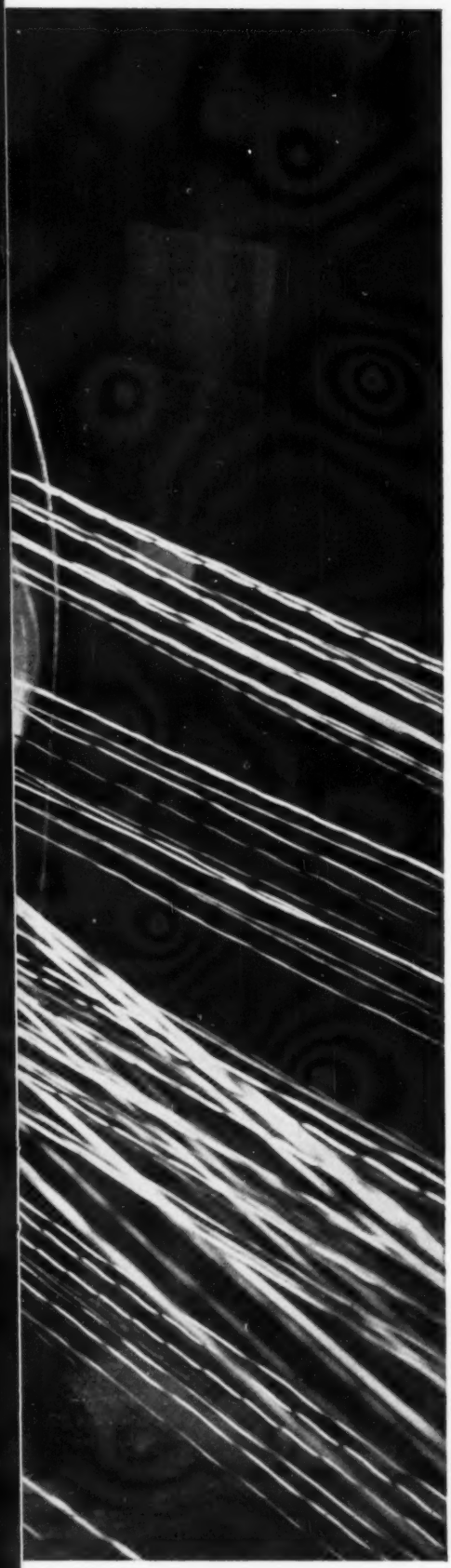


Under the hood, you'll find nearly 12% more cargo capacity, too. Along with all of the refinements you'll enjoy in the '61 Corvair, you'll appreciate the traditional virtues that have become a trademark with us: that air-cooled rear engine (never needs antifreeze), the traction, the nimble handling that makes driving easier.

Give Corvair a chance to show you what it can do for your balance sheet. Your Chevrolet dealer's the man to see. (And by the way, you might well be interested in Corvair's wagons—the Lakewood and the intriguing Greenbrier. Check them both out while you're getting the short, sweet details about Corvair economy at your dealer's.) . . . Chevrolet Division of General Motors, Detroit 2, Michigan.



corvair
for economical transportation



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A NEW LINE OF QUALITY ENGINEERED TELEPHONE CABLES

Only Qualpeth telephone cables offer these new, exclusive features for the finest in transmission and performance. **Reduced cross talk** with a new oscillating face plate method of stranding pairs into units. This method insures freedom from parallelism between a pair in one unit and a pair in another unit. The end result, cross talk characteristics are greatly improved. **Polyethylene binders:** colored polyethylene binder tapes provide easy identification due to color brilliance and freedom from fraying. **Tape over shield:** an acetate tape applied over overlapped edge of smooth shield provides protection against cutting into sheath. **Sheath uniformity gauge:** tests every foot of Qualpeth cable during extrusion for thickness and concentricity of sheath. Upon customer request, Qualpeth cables will be shipped under positive pressure. Your way of checking against hidden shipment and installation damages. Qualpeth cables are available with aluminum or copper shields, in single or double sheaths, for aerial (including new Figure 8 self-supporting messenger type) duct or direct earth burial installation. Call our distributors for complete details about this outstanding line of telephone cables . . . quality-engineered to give you the finest. **Available for shipment on November 1, 1960.** General Cable Corporation, 730 Third Ave., New York 17, N.Y.

*Trademark of General Cable Corporation

Distributed by: Automatic Electric Sales Corporation, Northlake, Illinois; Leich Sales Corporation, 427 West Randolph Street, Chicago 6, Illinois.

GCC
GENERAL CABLE CORPORATION

At speakers' table as retiring association President James C. Crane addressed the meeting, were these guests (left to right): West Virginia Public Service Commission Chairman Myron R. Renick; West Virginia's Governor, Cecil H. Underwood; Mrs. Crane; and Illinois Commerce Commission Chairman, George R. Perrine.

Ninth W.Va. Meeting Shows Attendance Increase

THE WEST VIRGINIA Telephone Association held its ninth annual meeting on Sept. 19, 20, and 21, at the Hotel Morgan, Morgantown, with an enrollment increase over last year. This year's attendance showed a registration of 183 members of the industry.

President James C. Crane of Masontown presided, and introduced the guest speakers.

West Virginia's Governor Cecil H. Underwood spoke on "The West Virginia Image."

He was followed by Myron R. Renick, Chairman of the West Virginia Public Service Commission.

Also representing the regulatory point of view, was an Illinois guest, the Commerce Commission Chairman George R. Perrine, who addressed the convention on "Required Rates and Regulations."

Illinois Commerce Commission Chairman George R. Perrine addresses convention of West Virginia Telephone Association.

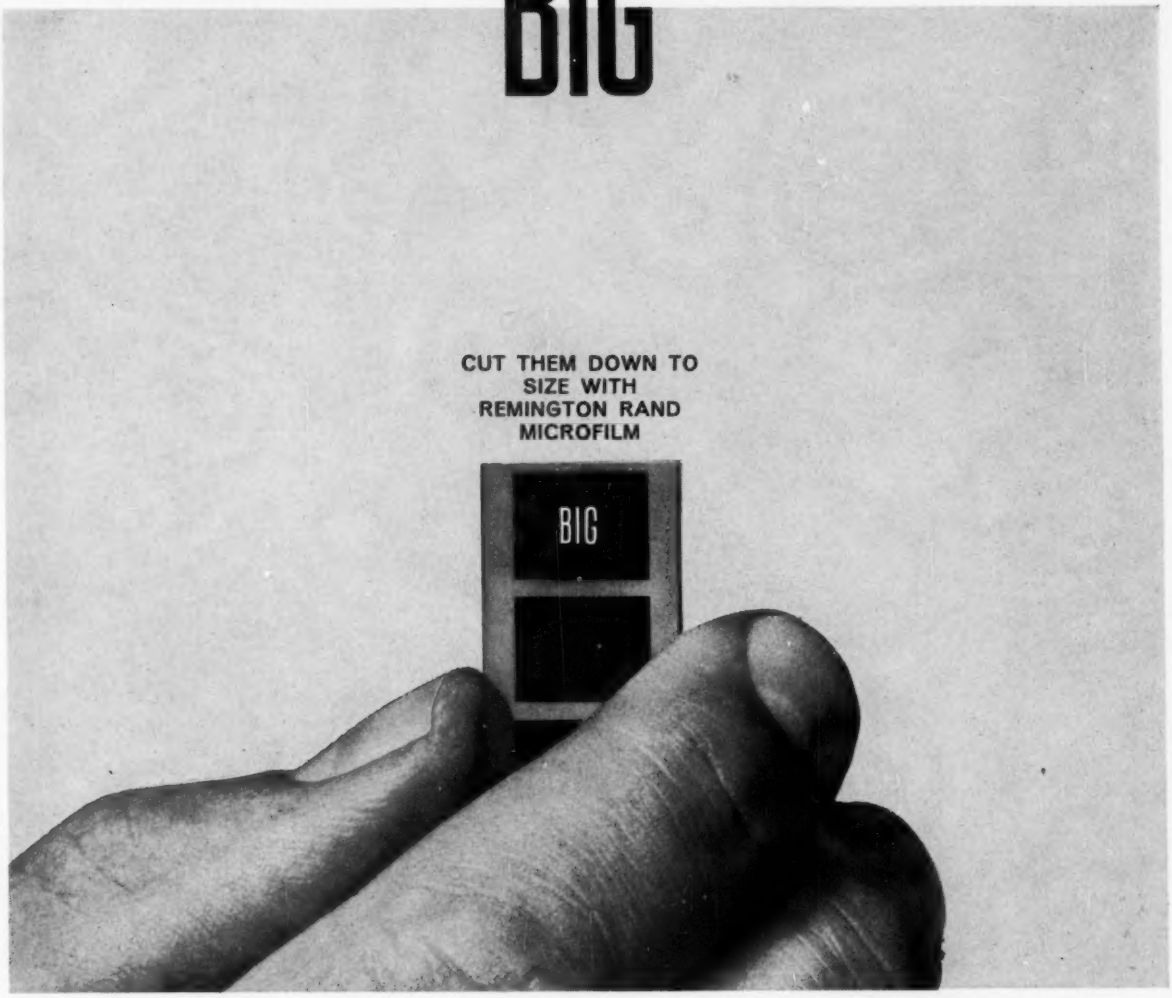
Officers of West Virginia association for 1961 (left to right): Robert Minear, secretary-treasurer; Delbert C. Dodrill, president; Don E. Feaster, second vice president; and Murrill Colburn, first vice president.

During the association's business meeting, Mr. Crane reviewed the accomplishments of 1960, after which LeRoy N. Darling of St. Mary's, secretary-treasurer, gave his report, and members of the board of directors were elected.

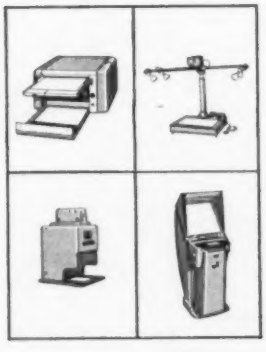
During the convention, through the hospitality of its president, Elvis J. Stahr, members of the association were invited to tour the campus and medical center of West Virginia University. Ladies in attendance also enjoyed a visit to a local glass plant, and a luncheon at the country club, while a

(Continued on page 51)

Utility record problems too BIG to handle?



Remington Rand Microfilm cameras and equipment give fast, efficient solution to record storage, protection and copying!



Prove to yourself how Remington Rand microfilming can solve space, storage and copying problems as well as help you devise new office techniques and systems. Even more important, Remington Rand microfilm experts are always available to you to *diagnose* record problems—help you train personnel in modern microfilm techniques. Learn all the advantages of Remington Rand Cameras—the best of the portables and stationaries—and all the supplementary equipment and services that go with them . . . see what they can do for your particular business operation. Get all the information on the complete microfilm line—Remington Rand! Use the attached coupon now—no obligation, of course.

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New York 17, N. Y.

I wish more information on Remington Rand Microfilm Equipment and its application to my business.

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Remington Rand Systems DIVISION OF SPERRY RAND CORPORATION
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STEP UP! to higher P-A-B-X sales

follow AE's simple 4-step program to increased revenu

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Subsidiary of

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Sell Top Quality. Automatic's P-A-B-X boards are made of the same fine components that go into the famous Strowger central office equipment. That's why telephone companies find AE boards provide dependable service with minimum maintenance.

Offer Auxiliary Features. Our 15 optional services allow you to satisfy the particular phone needs of all types of businesses.

Provide Fast Delivery. AE stocks six P-A-B-X boards to meet every need of your subscribers. You can give quicker service on ready-made systems to both small and large businesses.

Promote P-A-B-X in your area. Our free sales kit is yours for the asking. It helps you explain the benefits of modern business communications to your customers. The kit includes a complete catalog, selling plan, data folders, sample proposal—even a sample contract. For your free kit, write: Automatic Electric Sales Corporation, Northlake, Illinois. In Canada, Automatic Electric Sales (Canada) Ltd., 185 Bartley Drive, Toronto 16.

Courts and Commissions

Ga. Commission Grants Raises to Two REA Borrowers

The Georgia Public Service Commission on Oct. 24 approved an amendment to its Oct. 4 order to the Union Point Telephone Co., Inc. to permit a rate increase prescribed on the earlier date to go into effect Nov. 1, rather than upon the completion of the company's plant expansion and improvement program.

The Union Point company, which also secured approval of a $228,000 REA loan, made its rate request on the basis that gross revenues were inadequate to meet the cost of rendering service when the improvement and expansion program was completed. With this loan, Union Point has borrowed a total of $624,000 from REA.

The rates authorized by the commission for the company should produce gross revenues of $88,508, based on an REA projection of 1,415 stations to be eventually served at Union Point. Operating expenses were estimated at $66,729; and net operating revenues as $17,508.

Old and new rates for Union Point are shown as follows:

	Old	*New*
One-party business	$6.25	$7.25
Two-party business	5.25	6.25
Four-party business	4.25	5.25
Rural business	5.25	5.50
One-party residence	4.25	4.75
Two-party residence	3.75	4.25
Four-party residence	3.00	3.50
Rural residence	4.25	4.25

•

The Georgia commission on the same date, also authorized a new rate schedule effective immediately, for the Wayne Telephone Co., Inc., Odum, for service at its Odum and Screven exchanges.

The Wayne company also secured approval of its request for an REA loan in the amount of $133,000 to finance improvements permitting it to serve a total of 748 stations when expansion is completed. This company has borrowed REA funds totalling $380,000.

Rates allowed the company, according to the commission, should produce gross revenues of $49,810 on the basis of the REA projection of 748 stations. Total operating expenses were figured at $39,046, leaving net revenues of $9,373.

Following are the old and new rates for Odum and Screven:

	Old	*New*
One-party business	$6.00	$6.75
Two-party business	5.00	5.75
Four-party business	4.00	4.75
Rural multi-party business	4.75	5.50
One-party residence	3.75	4.25
Two-party residence	3.25	3.50
Four-party residence	2.75	3.00
Rural multi-party residence	3.75	4.00

Agree to Advance Hearing Of SW Bell Kan. Rate Case

An order handed down by the Kansas Supreme Court granted a motion by the Kansas Corporation Commission to advance the court's hearing of a Southwestern Bell Telephone Co. rate case (TELEPHONY, Oct. 29).

The court is to decide whether Southwestern Bell can collect a 5.8 million dollar increase immediately on a temporary basis. The commission granted the company 1.3 million dollars of the increase and the company appealed to Shawnee County District Court, contending that it was entitled to the 5.8 million dollars originally requested.

Southwestern Bell obtained permission from the lower court to collect the full amount pending the outcome of its appeal. This decision then was appealed to the Kansas Supreme Court.

Ask Ida. Company to Submit Revised Rate Schedule

The Idaho Public Utilities Commission on Oct. 19 asked the Owyhee Telephone Co., Homedale, to submit a schedule of revised rates and charges designed to increase annual revenue by not more than $39,000.

The company, which serves 2,073 subscribers in Wilder, Marsing, and Homedale, had submitted a schedule which would have increased its annual revenues by $48,769.

The commission, however, ruled that the proposed rates "are higher than is necessary to provide the revenues to pay all necessary operating expenses, depreciation, taxes, and interest on presently outstanding notes."

The commission said further that Owyhee had submitted evidence that it lost $21,332 in 1959, and would have a net loss of $18,399 in 1960 under the present rate schedule.

A new rate schedule, permitting the company to increase its revenues by the $39,000 ordered by the commission, would become effective in 20 days following commission approval.

Miss. Company Gets EAS Rates At Two Exchanges

The Bay Springs Telephone Co., Inc. has been granted a rate increase by the Mississippi Public Service Commission for its Big Creek and Soso exchanges.

Big Creek subscribers will have direct dialing to the Laurel exchange of Southern Bell Telephone & Telegraph Co. and toll free service to Southern Bell's Ellisville exchange.

Soso subscribers have been provided additional circuits into Laurel and will have extended area service with Ellisville and Big Creek.

Uphold Texas City's Denial Of Raise to General of SW

Judge W. R. Blalock of the 93rd Texas District Court on Oct. 20 upheld an ordinance passed by the city of Weslaco on June 21 denying a rate increase to the General Telephone Co. of the Southwest, San Angelo (TELEPHONY, Oct. 15).

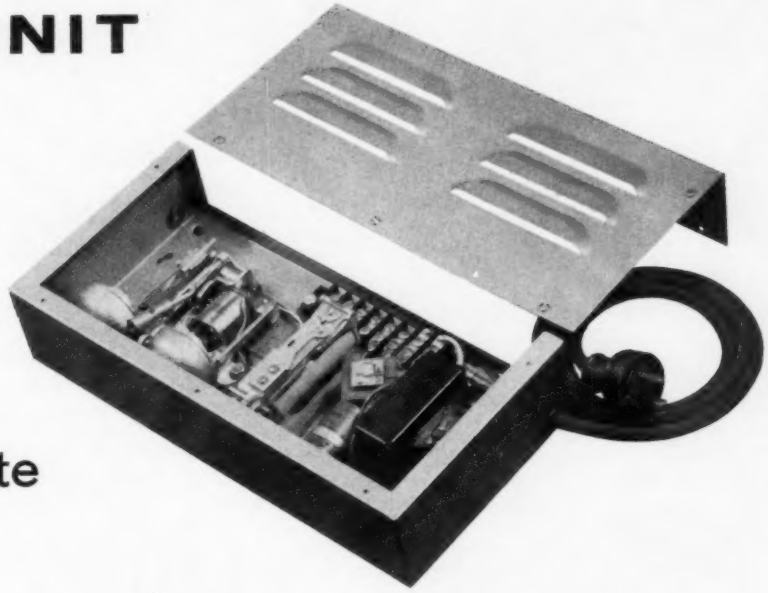
However, Judge Blalock failed to go along with the city on its attempt to reduce intrastate rates for long distance calls originating in Weslaco.

In the June 21 ordinance, the city commission cut long distance rates on Weslaco calls terminating in Texas to the same charges fixed by the Federal Communications Commission for calls crossing the state line.

Judge Blalock's decision followed hearings on a temporary restraining order filed by the General company after Weslaco had refused the company's request for a rate increase.

The company had charged that the present Weslaco rates are "confisca-

LEICH'S EXTENSION RELAY RINGING UNIT



Adds Extra Ringer... Controls Remote Devices

Leich's Extension Relay Ringing Unit has a wide variety of practical uses. It provides an extra ringer on lines that have reached their ringer capacity. It also operates signals, bells, gongs, horns, or any device that uses 110 volt, 60 cycle alternating current.

Leich's Relay Ringing Unit consists of a traffic type telephone ringer, a relay, and a one-to-one isolation transformer. A metal box 12" long, 6" wide, and 2½" deep houses these components. It is equipped with a cord and plug for connection to a 110 volt, 60 cycle alternating current receptacle.

WIDE VARIETY OF USES

Here are only two of the many uses for the Relay Ringing Unit. It can operate almost any device that uses 110 volt, 60 cycle alternating current and is controlled from the telephone line by ringing current.

Power requirements of the devices can be up to 35 watts. Over 35 watts, an auxiliary power relay must be used.

1. Rural Businesses on a party line often want an Extension Loud Ringing Bell to alert them if there is a call when they are away from the phone. Leich's Relay Ringing Unit can be used to actuate this bell.

2. Fire alarm sirens can be controlled by the Leich unit. By dialing a predetermined number, you actuate it and sound the fire alarm equipment.

ORDERING INFORMATION

When ordering, please state quantity, catalog number, and ringer desired.

EXAMPLE:	Quantity	Catalog No.
	10	017022*

Cat. No.	Description	Pr. Ea.
017022-C thru V	Extension Relay Ringing Unit, Frequency Ringer.....	$34.40

*Add suffix letter code for Ringers

C—Straight Line Ringer
G—33⅓ Cycle Ringer
H—50 Cycle Ringer
J—66⅔ Cycle Ringer
K—16⅔ Cycle Ringer
L—25 Cycle Ringer
M—30 Cycle Ringer
N—42 Cycle Ringer
P—54 Cycle Ringer
R—66 Cycle Ringer
S—16 Cycle Ringer
T—20 Cycle Ringer
U—60 Cycle Ringer
V—40 Cycle Ringer

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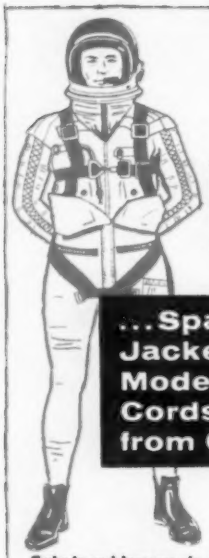
manufacturers of telephones, switchboards and related apparatus since 1907



P.V.C.

...Space-Age Jacket for Modern Phone Cords from COMCO

Today's and tomorrow's demands on your system calls for ever tougher, more durable and trouble free equipment. In cords, that's P.V.C. from COMCO,

Superior to Neoprene in toughness and crack resistance, this P.V.C. (Poly-Vinyl-Chloride) jacketing has other advantages, too. Jacket's smoother inner surface permits conductors to flex freely . . . eliminates binding and fracturing —thus assuring longer noise-free life.

P.V.C. jackets are standard on all COMCO straight cords and Spiraflex Rectractile Cords . . . choice of black or ten colors.

Let COMCO cater to your cord requirements! Handset, deskstand, operator, switchboard, test, patch and inter-communication cords. Standard and extra lengths.

Write for Catalog, Samples and Prices

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427 W. Randolph St., Chicago 6, Illinois
AUTOMATIC ELECTRIC SALES CORP.
Northlake, Ill.

tory" and that depreciation rates should be applied to the fair value of the property.

The city had maintained that depreciation rates should be related to the original cost of the property.

PSC Approves Rate Increase For New York Independent

The New York Public Service Commission approved a tariff amendment filed by Crown Point Telephone Corp. designed to increase most of its rates, effective Nov. 1.

The company provides dial service to about 430 stations in and near Crown Point. It sought increases which would have provided it with about $4,000 additional annual revenue, claiming that such an amount was needed to enable it to continue adequate service.

The PSC deemed the proposed increases to be excessive, however; and as a result, the company submitted a new tariff which was accepted. It will produce about $3,100 in additional annual revenue.

Seek Approval to Purchase Three Indiana Companies

The Hendricks Telephone Corp., Roachdale, has asked the Indiana Public Service Commission for authority to purchase three companies.

These companies are the Citizens Telephone Co., Inc., Whitestown; Big Springs Telephone Co., Inc., and Thomas Telephone Exchange, Inc., Roachdale.

The Hendricks corporation proposes to consolidate its Stilesville, Amo and New Winchester exchanges into an exchange at Amo and the Whitestown and Big Springs exchanges into a Whitestown exchange.

SW States Requests Rate Increase in Louisiana

An application for a general increase in telephone rates has been filed with the Louisiana Public Service Commission by the Southwestern States Telephone Co., Brownwood, Tex., it was reported on Nov. 1.

The company, which serves 23 Louisiana towns, is seeking an increase in annual revenue of $388,400.

Increases in material, equipment and labor costs were cited as the principal reason the company's earnings in Louisiana had dropped to the point of requiring a rate increase. The application states the company's current rate of return on its present investment of over 4 million dollars in Louisiana amounts to 2.18 per cent. The increase sought by the company would raise the rate of return to 6½ per cent.

In the rate application, Southwestern States points out that a rate increase granted in July, 1958, resulted in only $129,900 annually, which was considerably less than the amount then requested by the company and has "proven to be far from sufficient." Since then, the company has made such improvements through expansion of telephone facilities that plant investment has materially increased.

Ill. Bell, General Company Request EAS Approvals

The Illinois Commerce Commission has set a Jan. 5 hearing date on the applications of Illinois Bell Telephone Co. and General Telephone Co. of Illinois to provide extended area service.

Illinois Bell has asked to provide EAS for its Rockford and South Beloit exchanges to General's exchanges at Belvidere, Byron, Rockton, Stillman Valley and Winnebago. It also sought toll free service for Rockford and South Beloit to the Northern Illinois Telephone Co.'s exchanges at Durand, Pecatonica and Seward.

The General company is asking for EAS for its Byron, Stillman Valley and Belvidere exchanges with Rockford and for its Rockton exchange with South Beloit.

Texas T&T Granted Rate Increase for Dial Service

J. B. Swink, general commercial and traffic manager of the Texas Telephone & Telegraph Co., Corsicana, has announced that the company has received approval from the Normangee City Council for increased rates to provide dial service.

Texas Telephone & Telegraph has completed a new building in Normangee and has added to and rebuilt the facilities. Additional facilities are available to provide service for the first time to those who have never had it.

Mr. Swink stated that the exchanges of Iola, Bedias, and North Zulch have been rebuilt and new buildings constructed for dial service. Conversion dates for these four exchanges will be early 1961. These exchanges are now receiving magneto service, and will be converted to dial, whereas the Normangee exchange is now common battery.

Old and new rates follow:

	Old	*New*
One-party business	$7.50	$8.70
Two-party business	6.75	7.80
Four-party business	6.00	7.20
Rural business	6.00	8.00
One-party residence	4.50	5.70
Two-party residence	4.00	4.80
Four-party residence	3.75	4.20
Rural residence	3.75	4.50

The Normangee exchange is now

Get rid of toll-call billing's **HIDDEN CHARGES!**

Here's how taking pictures with a RECORDAK Microfilmer can cut billing costs 50% in even small companies!

Add up the costs of your present billing operations: the time it takes to post toll call details . . . even your costs for paper supplies! Chances are, these can be trimmed 50% or more by *avoiding the waste of descriptive billing!* And it's so easy with the trim, compact RECORDAK Portable Microfilmer!

You simply post the total of toll charges (plus tax) on bill . . . microfilm this simplified bill and the toll tickets . . . and send both on to subscriber! Not only do the bills get out much faster, but you reduce the chance of having transcription errors crop up. You know what a nuisance these can be!

This Recordak system makes a big hit with subscribers, too. They like getting the toll tickets with the bill since questions about calls are answered automatically.

Cost is low. You can microfilm up to 14 items on a penny's worth of film with the RECORDAK Portable Microfilmer. Mail coupon for further details.

RECORDAK®

(Subsidiary of Eastman Kodak Company)

originator of modern microfilming

—now in its 33rd year

IN CANADA contact Recordak of Canada Ltd., Toronto

AA-11

RECORDAK CORPORATION, 415 Madison Avenue, New York 17, N. Y.

Please send further details on RECORDAK Toll Billing System.
Also details on the new RECORDAK Portable Microfilmer.

MAIL COUPON TODAY

Name_____ Position_____

Company_____ Street_____

City_____ State_____

serving 261 subscribers with 104 held applications. The new installation will provide service to the 104 held applications and others in the future.

The company has converted about twelve exchanges to dial service in 1960. On Nov. 17, the Leona exchange will be cut over to dial. Nine other exchanges are ready for dial service which will be provided in the latter part of December or in the first of 1961.

Name Department Heads For Army's ADVENT Agency

Brig. Gen. William M. Thames Jr., commanding general of the newly-established U. S. Army ADVENT Management Agency, has named department heads in his agency, the Office of the Chief Signal Officer announced on Oct. 31. Col. J. W. Schroder is deputy system manager; Major L. C. Schuknecht is executive officer.

Others are: Col. L. G. Forbes, chief of the program control department; Col. R. H. Goodrich, chief of the mission equipment department; Col. R. E. Kimball, chief of the systems-engineering department; Major W. H. Clark, chief of the booster vehicle departments; and Col. G. S. Waterman, chief of the research and development operations department.

The over-all systems management of the ADVENT communications satellite project has been transferred from the Advanced Research Projects Agency of the Department of Defense to the Army. To implement this responsibility, the U. S. Army Signal Corps set up the USAAMA, which has its headquarters at Fort Monmouth, N. J.

The project transfer is in keeping with a decision of the Secretary of Defense to assign management responsibilities for communications satellites to the Department of the Army.

Project ADVENT's objective is to conduct the research and development necessary to demonstrate the feasibility of a microwave communications satellite operating in an equatorial orbit.

The half-ton satellite will operate at a height of 22,300 miles with two ground stations, one near Camp Roberts, Cal., and the other near Ft. Dix, N. J. A shipborne station provided by the U. S. Navy is also planned.

Obituary

MARK A. SUNSTROM, 63, retired vice president and director of the International Telephone & Telegraph Corp. died on Oct. 31 in Ft. Lauderdale, Fla.

Until his retirement in 1957, Mr. Sunstrom had also served as executive vice president of the International Standard Electric Corp., an overseas affiliate of ITT.

A native of Iowa, Mr. Sunstrom attended Coe College in Cedar Rapids.

Prior to joining ITT in 1926, he had been manager in charge of public utility audits and investigations for Arthur Anderson & Co.

He was assigned abroad several times, first in Paris and then at ITT operations in Spain, Portugal, Belgium, Holland, Denmark, Norway and Sweden. He also had served as divisional vice president for ITT in Rio de Janeiro.

In 1938 he was elected a member of the board of ITT, the youngest man at that time ever to hold the position.

During World War I he was a lieutenant in the Army.

Survivors include the widow, Mrs. Gladys Holliday Sunstrom; a daughter, Mrs. John Taylor, and a son, Mark A. Sunstrom Jr.

This attractive display of telephones ringing a store window, against the background of a modern home kitchen, helped sell instruments, including the "Princess," for Christmas delivery, and aided the campaign to sell subscribers additional services at Ephrata, Pa. Local merchants cooperated with the Denver & Ephrata Telephone & Telegraph Co. to provide the display. Company sales representatives, during Ephrata Fair week, Sept. 19-24, contacted each new subscriber and all who had moved into new locations since the first of the year, inquired about existing service, attempted to sell more service, and invited the subscribers downtown to visit the display.

Effect Purchase in Ind.

The Central Indiana Telephone Corp., has purchased the Citizens Telephone Corp., Kempton, it was reported recently (TELEPHONY, Aug. 13). The Central Indiana company also owns the Battle Ground Telephone Co., Inc.

Set NSC Utilities Meeting

The Executive Committee of the National Safety Council's Public Utilities Section will meet on Dec. 13 and 14 in the Statler Hilton Hotel, New York City. This committee is composed of safety directors from some 50 large utilities throughout the country.

Ask to Bill Taxes in Mo.

The Chariton Valley Telephone Co., Bucklin, has asked the Missouri Public Service Commission for permission to add any license, gross receipts tax, or occupational tax levied by any of the municipalities served by the company to rates of subscribers within the initial rate area on a pro rota basis. It asks that this change become effective Dec. 1.

Set Rate Hearing in Mo.

The Missouri Public Service Commission has set a Dec. 7 hearing date on the application of Laclede Telephone Exchange for a rate increase.

Set '61 Microwave Symposium

The Institute of Radio Engineers announced on Oct. 14 that the 1961 national symposium of the professional group on microwave theory and techniques will be held on May 15, 16, and 17, at the Sheraton Park Hotel in Washington, D. C.

Face Up to Life

"Too many people are thinking of security instead of opportunity. They seem more afraid of life than death." —Former Secretary of State JAMES F. BYRNES.

What do 9,500,000 Independent Telephones have in common?

They have USITA.

That figure is 85% of the more than 11,000,000 Independent telephones now in service. They are operated by alert and progressive telephone companies which are members of the United States Independent Telephone Association.

Why Do They Belong?

USITA is the keystone of Independent telephony—the force upon which Independent telephone companies depend for many things they could not do individually.

Assistance in increasing toll compensation revenues is one example.

Interpretation of regulations and trends is another. USITA is the legislative spokesman for these companies. It is also their authoritative source of information in technical, financial, and a host of other important matters affecting their welfare.

How Can Your Company Join?

It's very easy. A letter or a phone call can start the wheels turning.

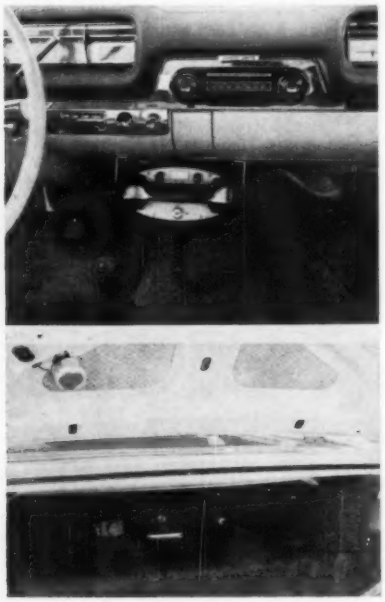
For details, telephone *COLLECT* the Association's Director of Information (National 8-6512) or write: United States Independent Telephone Association, 438 Pennsylvania Building, Washington 4, D. C.

KEYSTONE OF INDEPENDENT TELEPHONY

News on New Products

MOBILE RADIO-TELEPHONE—AC Spark Plug, electronics division of General Motors, has announced a new four-channel, 150 Mcs, mobile radio-telephone, with push-button channel selector, designed specifically for common carrier use.

Called AChieverfone, it will be manufactured in AC Spark Plug's Milwaukee plants. It has been designed and packaged into two compact units—the control head and the receiver-transmitter unit.



TOP: AChieverfone mounted under dash. BELOW: R-T unit installed on trunk shelf.

Ease of installation is one of the principal design advantages claimed for the AChieverfone. Compactness has been achieved by designing the decoder to operate at the environments of the receiver-transmitter and making it a part of this package; and by combining the ringer boxes, junction boxes, channel selector switches, and handset mounts into a single control head.

The control head can be mounted on top of the dash, under the dash, on the transmission hump, or in a number of other places, such as the glove compartment. The R-T unit is slipped into a base plate which is mounted on the trunk shelf or any other location, and locked with a locking lever. One feature of this unit is that it may be mounted in any position, the company points out.

In line with the ease of installation, both the control head and the R-T package have been designed for rapid access during servicing. The control head, for example, can be removed for servicing without disturbing the mounting. The R-T unit likewise can be removed and placed on the floor of the trunk and checked while it is still in operation. The chassis layout in the R-T unit facilitates the removal of any component without removing other components first.

Cooling by a cast heat sink at both ends of the R-T unit results in the average mean temperature of the transmitter final package being 18 degrees Centigrade cooler than comparable models without heat sink cooling, the company says.

In the AChieverfone, the final power output tube (6883) is operated so that none of its ratings are exceeded, even at high line voltages. AC's transmitter puts out a nominal 24 watts of radiated R-T power from the antenna.

New 7000 series tubes designed specifically for mobile radio use are incorporated wherever they are practical for greater reliability. The tubes have 13.6-volt filaments as compared to 12-volt filaments for most tubes. The decoder has proven reliable in excess of 500 hours at an ambient temperature of 86 degrees Centigrade, the company states.

The entire equipment has been laboratory-tested at 50 degrees Centigrade for periods exceeding 600 hours without failure. Power supplies have functioned

Close-up of AChieverfone.

at elevated laboratory temperatures for 12,000 to 15,000 hours without failure.

The use of mass-produced components in many instances is said to contribute to the low cost of the entire unit. AC also has developed a simplified decoder which operates at very highly increased reliability, according to the company.

Minimum power drain and small size have been gained through judicious selection of tubes and by keeping high the efficiencies of the power supply and transmitter circuits. The AChieverfone draws minimum battery power for a tube version. Actually, it draws less current on transmit than some transistorized versions. On receive, it draws only three or four more amperes than some transistorized versions, but this small drain doesn't appear to be significant

TELEPHONY PUBLISHING CORP.
608 S. Dearborn St.
Chicago 5, Ill.

Please have the manufacturer send me without obligation the literature indicated by the following numbers:

NP1455_____; NP1456_____; NP1457_____; NP1458_____;

NP1459_____; NP1460_____; NP1461_____; NP1462_____.

Name.....

Company.....

Street.....

Town and State.....

11/12/60

Supplies! When you need them most

"MOON": Hello, Ed. Glad to hear your voice! We were afraid that hurricane might have you folks in real trouble.

ED: Well, we're in trouble, believe me, right up to our cross-arms, Moon.

"MOON": Sorry to hear it, Ed. What can we do to help?

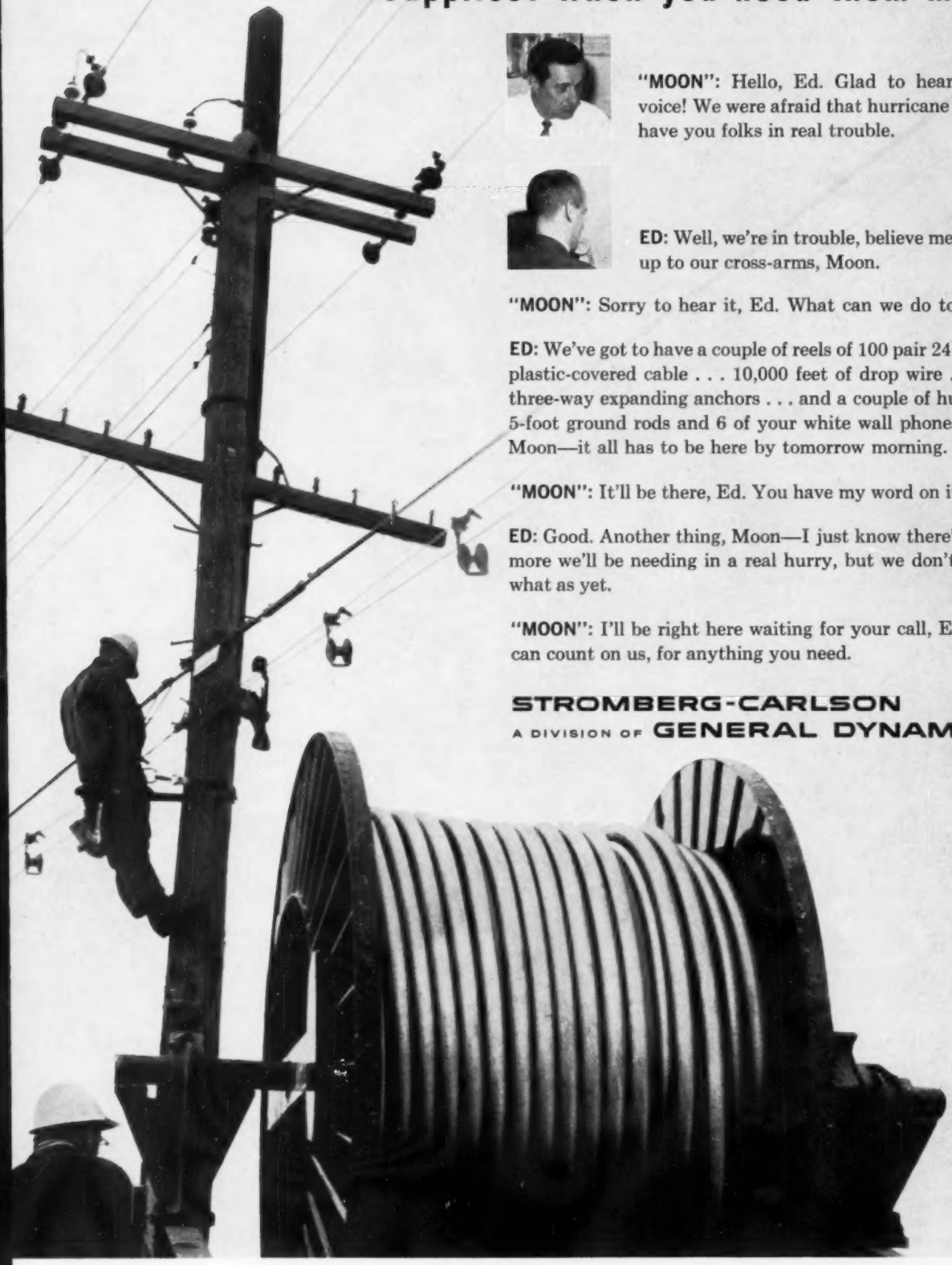
ED: We've got to have a couple of reels of 100 pair 24-gauge plastic-covered cable . . . 10,000 feet of drop wire . . . 50 three-way expanding anchors . . . and a couple of hundred 5-foot ground rods and 6 of your white wall phones. And Moon—it all has to be here by tomorrow morning.

"MOON": It'll be there, Ed. You have my word on it.

ED: Good. Another thing, Moon—I just know there's a lot more we'll be needing in a real hurry, but we don't know what as yet.

"MOON": I'll be right here waiting for your call, Ed. You can count on us, for anything you need.

STROMBERG-CARLSON
A DIVISION OF **GENERAL DYNAMICS**



ATLANTA: TRinity 5-7467; CHICAGO: STate 2-4235; KANSAS CITY: HArrison 1-6618; ROCHESTER: HUbbard 2-2200; SAN FRANCISCO: OXford 7-3630.

in view of the economies achieved with tubes, the company reports.

The unit is FCC type, accepted under parts 10, 11, 16, and 21, and it is presently qualifying to meet Bell System requirements for VHF mobile radiotelephones.

The receiver is a fixed-tuned, double-superheterodyne, fm configuration tunable over the 144 to 174 mc frequency range. The transmitter produces a radio-frequency power output of approximately 24 watts. It can be tuned to any frequency in the 144-174 mc region and maintains its (unmodulated) carrier frequency within 0.0005 per cent under all permissible operating environments.

The power supply is a transistorized device which provides B plate voltages for both the transmitter and receiver. It is a transistorized dc to dc converter which changes the 13.6 vdc power from the electrical system of the vehicle to the higher voltages required to operate the receiver-transmitter.

Selective calling of mobile telephones is accomplished by means of two-tone sequential audio modulation of the radio-frequency carrier. The decoder is a transistorized electro-mechanical device for use with 12-volt dc electrical systems and can be set to respond to any pre-selected call number chosen out of more than 51,000 available five-digit codes. Request NP1455.

•

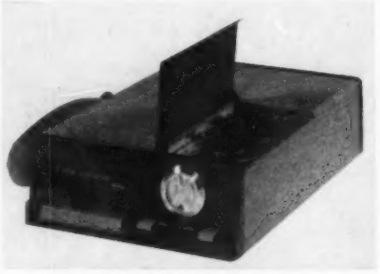
TRANSISTOR TELEPHONE ANSWERING, RECORDING, DICTATING MACHINE—A new transistor telephone answering and message recording and dictating instrument, the Code-A-Phone, has been announced by Code-A-Phone Electronics, Inc.

The new instrument comes in five different models—200, 300, 500, 600, and 800—and is designed to fit the user, rather than the user having to adapt himself to the machine.

Model 200 is the basic unit, created primarily for homes and businesses where round-the-clock telephone answering service is needed. It answers the telephone in your own voice and allows plenty of time for a satisfactory answering message, which can be of any length up to three minutes, and can be changed as often as desired. This model is used primarily where it is not necessary to record incoming messages.

Model 300 answers your telephone with your recorded announcement message and is equipped with a coding mechanism which makes it possible for you to change your outgoing announcement message from a remote telephone.

Model 500 answers your telephone in your own voice performing all of the operations of the model 200 and in addition, records incoming messages of variable length on a 60 or 90 minute removable tape cartridge. Model 500 is used as a dictating machine while in the office and can be used as such from a distant telephone.



Model 500 Code-A-Phone

Model 600, like the 500, also answers the telephone in your own voice by playing your recorded announcement and records in-coming calls. In addition, it permits recording of all voices including your own on a conference call. It also contains full dictating features and can transmit prerecorded information over the telephone wires to another Code-A-Phone or person. It is equipped with a loud-speaker monitor system and provides instant playback on recorded calls.

Features of the Model 800 are: Answering your telephone; playing your recorded announcement; through coding reviewing incoming messages left with your Code-A-Phone from a distant telephone; dictating; recording of all voices on conference calls; on-the-spot play-back of messages received from callers, dictation, and of recorded two-party or conference calls; monitoring of incoming calls by a loud-speaker, and transmission of data back and forth over the telephone lines.

The removable tape cartridges used in the Code-A-Phone may be used on the Model 100 transcriber in the typing of letters or messages, or filed for future reference, and they can be used over and over again.

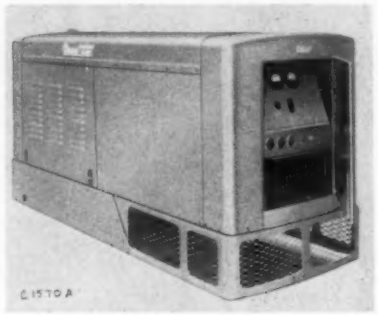
The company announces that Models 200, 300, 500, and 600 are in production at its Portland, Ore., factory and that Model 800, along with the Model 100 transcriber will be available by the first of the year. Request NP-1456.

•

DUAL-PHASE POWER ELECTRIC PLANTS — Factory-modified models of D. W. Onan's standard line of gasoline-driven electric generating plants now provide full-rated power in both single and three-phase current, the manufacturer announces.

Designed to provide a more flexible unit (one plant delivering either 120/240 single-phase, or 120/208 3-phase output) the new dual-phase generating sets were developed primarily for telephone utilities where repeater stations and Independent exchanges demand uninterrupted service on both types of power.

Other applications are as emergency units for change-over or standby electric power and gas service, and other commercial and industrial applications.



Electric generating plant—40 kw—gasoline-driven, housed model.

These generating sets are variations of standard Onan plants and are said to retain all the features of the basic model, plus having the advantage of delivering dual-phase power from *one* source. They are available in 12 sizes ranging from 6kw single-phase, to 85 kw three-phase. Request NP1457.

•

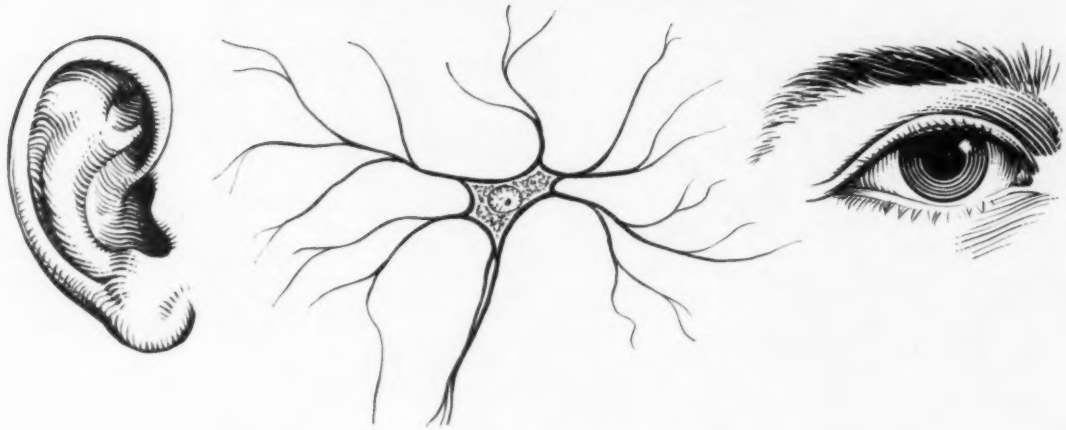
DICTATION EQUIPMENT—International Business Machines Corp. has announced its entry into the dictation equipment industry with a new line of products designed to increase office efficiency and save time for executives and secretaries, according to H. Wisner Miller Jr., IBM vice president and general manager of the electric typewriter division. This equipment will be sold by the electric typewriter sales force.

Mr. Miller, who stated that "business communications have become one of the most time-consuming and costly phases of running a business today," said estimates are that the cost of the average business letter has climbed to a record $1.83, an increase of more than 60 per cent since 1953 (Source: Dartnell Corp., Chicago Ill.).

He said dictation devices and electric typewriters can help reduce these costs by increasing the speed and production of office correspondence.

The new dictation product line is called the IBM "Executary" dictation equipment. All the products are fully transistorized, and recording is done on

WHAT GOES ON HERE?



Bell Telephone Laboratories' new electronic "nerve cell" is a step toward finding out

One fascinating area of communications has long resisted exploration—what happens inside the nervous system when you see, or when you hear.

This area is of special interest to telephone science; knowledge of how the nervous system handles sound and picture signals can help determine what information is essential to perception. This in turn may lead to more efficient communication instruments and systems.

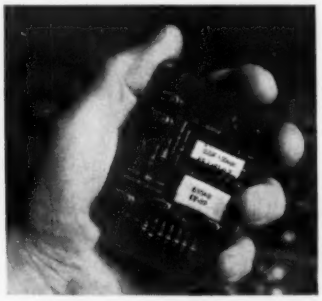
To probe the mystery of nerve activity, Bell Telephone Laboratories scientists have developed an electronic model of a living nerve cell or neuron. Consisting of transistors, resistors, capacitors and diodes, the "artificial neuron" exhibits many of the characteristics of a living neuron; for instance, "all-or-none" response and fatigue.

In one experiment at Bell Laboratories, a network of artificial neurons is subjected to a stimulus from light through a set of photocells. The network can distinguish specific patterns of light and dark, thus duplicating roughly some of the eye's basic reactions to light. Similar studies are underway to explore our hearing processes.

At present, too little is known about neural action to permit exact electronic duplication. But experiments with artificial neurons can provide suggestive clues, contributing to a stimulating interplay between electronics and neurophysiology which may help workers in both disciplines.

The human nervous system, including the brain, is the most efficient and versatile data processing system known; and data processing is an essential part of communications. The artificial neuron provides a new approach to investigating and understanding basic nerve network functions. It is a fresh example of how Bell Telephone Laboratories constantly explores new frontiers to improve America's communications system, now and in the years ahead.

Network of neurons is assembled by L. D. Harmon of Bell Laboratories, the initiator of this new research. Many kinds of assemblies are possible.



A single artificial neuron. It delivers electrical impulses when stimulated, like a living cell. Neurons are also being used for research into hearing.

BELL TELEPHONE LABORATORIES

WORLD CENTER OF COMMUNICATIONS RESEARCH AND DEVELOPMENT

a magnetic belt that is said to be usable thousands of times, and is easily mailed, filed or stored.

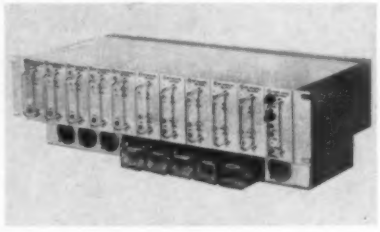
Each magnetic belt holds 14 minutes of recording. The automatic erasure feature and unlimited review of dictated material provide the executive with error-free dictation and eliminate costly misunderstandings by the secretary during the transcribing process.

A dictation unit, a transcriber, and a combination unit are presently available. The company said that it plans on broadening the line eventually to include portable and remote systems. Request NP1458.

•

AM & FS AUDIO TONES—The 2056 series of AM tones was designed, Radio Frequency Laboratories Inc. says, to meet low-speed tone signaling and control requirements when low noise lines and inherently low noise communication circuits, as provided by microwave and voice equipments, are available for transmission. The 2056 series of FS tones is used when ultimate reliability and high speed keying are required. They can be used in circuits which are inherently noisy and which are subject to fading conditions.

This equipment features modern design utilizing plug-in card construction and is reported to provide a unit having a maximum number of channels in a given space, plus a saving in cost.



Ten AM transmitters or receivers and a common power supply are mounted in a single frame measuring 3½ inches x 19 inches. Each channel is terminated with a terminal strip at rear of the frame. Output relays, if required, are mounted on a bracket underneath the main chassis frame. Request NP 1459.

•

SPRING TENSION GAUGE — Manufacturers and service men who work on electronic equipment find it essential to accurately check tensions of relay or other springs and to accurately determine settings.

To meet this need, P. K. Neuses Inc. reports it has produced a new spring tension gauge that has a greater range —0 to 1200 grams in 100 gram steps, with the range also shown in ounces and pounds avoirdupois from 0 to 2¾ pounds. Previous models had a range up to 150 grams only.

This gauge, called the STG-2-Z, is said to be extremely accurate, and accuracy will remain constant permitting a dependable standard of measurement.

It is also said to be easy to hold while making readings. The scale is calibrated on front and back so the gauge can be read left to right, as well as right to left.

It is made of satin chrome steel frame with blued clock-spring indicator designed for rugged use. Studs protect spring against damage, Neuses says. The frame is 6¾ inches long—over-all length 9½ inches. Request NP1460.

•

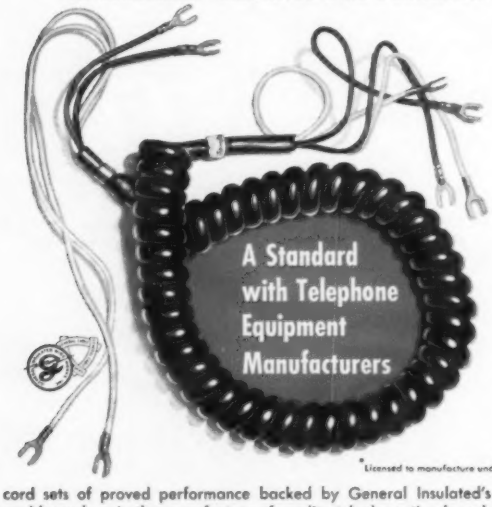
DIGITAL CLOCKS—Haydon Instrument Co. announces that its concept of mechanical transfer of numbers by a planetary gear drive is featured in the 12-hour and 24-hour PlanetGear clocks. Instantaneous snap-over of numbers is accomplished by a nylon cam and roller compensating device, which moves the planetary gear, said to be "always-in-mesh." This means all digits are in full view at the read line.

The torque required to drive PlanetGear clocks is uniformly low, and according to Haydon, the timing motors may be of the miniature series in various voltages and frequencies.

Preset of hours and minutes is man-

Spiraflex® CORD

BY GENERAL INSULATED WIRE WORKS, INC.*



* Licensed to manufacture under existing patents.

Telephone cord sets of proved performance backed by General Insulated's unmatched experience and know-how in the manufacture of quality telephone tinsel cordage:

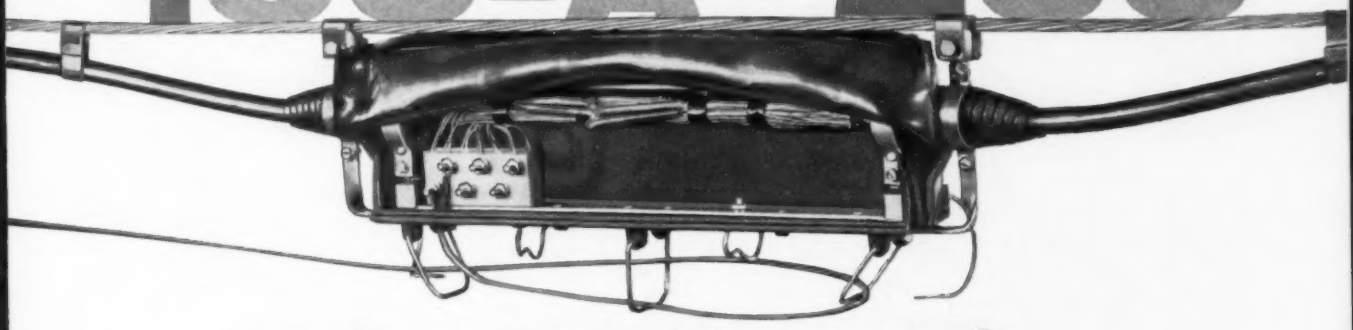
Spiraflex HANDSET CORDS in bright colors with non-staining thermoplastic jackets in solid color extrusions matching color shade and sheen of telephone sets. Also non-staining black Neoprene jacketed cords. Both types available with or without integral moldings and terminations. Furnished in standard or extra long lengths.

STRAIGHT HANDSET AND DESK SET CORDS are available in non-staining thermoplastic constructions in matching colors and in black Neoprene.

GENERAL INSULATED WIRE WORKS, INC.

A DIVISION OF GENERAL CABLE CORPORATION
Providence 5, Rhode Island

100-A • 200



ready access cable terminals

for terminals and straight splices

300 • 400

ready access cable closures

for branch splices

for use with plastic jacketed, plastic insulated cables up to 2.2" in diameter

READY ACCESS CABLE TERMINALS

Catalog Series 100-A . . . for cable up to 1.0" O.D.
Catalog Series 200 . . . for cable from 1.0" to 2.2" O.D.

READY ACCESS CABLE CLOSURES

Catalog Series 300 . . . for cable up to 1.0" O.D.
Catalog Series 400 . . . for cable from 1.0" to 2.2" O.D.

Up to four 6-pair Reliable Catalog No. 105 Terminal Blocks can be added to both terminals and closures, or the space can be used for loading coils. The flexible neoprene cover can be folded back while internal wiring is altered to meet changing requirements.

1909 50TH ANNIVERSARY Reliable 1959

Reliable

ELECTRIC COMPANY • FRANKLIN PARK, ILLINOIS

A SYMBOL OF INTEGRITY SINCE 1909

ual with the set knob on the side of the clock geared to the seconds drum on a step-up ratio of 8 to 1.

The numerals are ⅜ inches high to MS-33558 (ASG), hot stamped, white on black for the hour and minute nylon drums; and either black, or red on white for the graduations and numerals on the seconds wheel.

Mounting dimensions are 2⅞ inches by 2⅜ inches. Depth is 4 inches maximum.

The Model #6010 24-hour clock is available in the same package size with the same ⅜ inch-high numeral markings of 1 to 24, by the use of an endless belt, tracking on the hours drum. The panel mount case and dust-proof cover are anodized aluminum. The flush mount window is clear (plexiglass) methacrylate.

Applications for Planet-Gear digital clocks include: Switchboards, instrument panels, control towers, radio stations, timers, industrial equipment, and other locations where accurate timing is important. Request NP1461.

•

UNDER FLOOR ELECTRICAL DISTRIBUTION SYSTEMS — Two underfloor electrical distribution systems, for use in construction and modernization, are announced by Wheatland Electric Products Co.

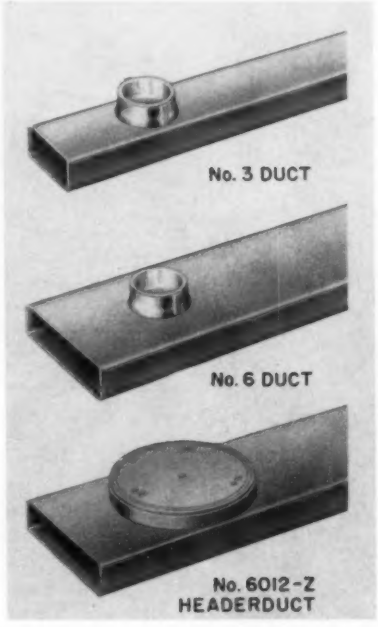
The standard underfloor duct system, "Wheatlanduct," is made of 14-gauge steel in two sizes. Company Catalog No. 3 has a cross section of 1½-inches deep x 3 inches wide; Catalog No. 6 is 1½-inches deep x 6½-inches wide.

Both ducts are manufactured in 10-foot lengths with 2-inch pipe size threaded outlets spaced every 24 inches. The company states the Zamac outlets are 1 inch high and capped to prevent moisture and concrete from seeping into the duct. Outlets of special heights are also available.

A complete line of junction box units and component assembly parts is included for the system, which may be installed singly, or in combination to form a single, double or triple-duct system.

Junction boxes for the one, two, or three-duct systems are provided, all with large single-access openings and outside adjustment. Interior partitions separate compartments for high and low potential wiring areas. A feature is that the junction box tops provide flush trim for floor covering.

Also offered by Wheatland is the new Headerduct cellular metal floor feeder raceway Series 6000, made of 14-gauge steel and furnished in 8 foot, 9 foot and 10 foot standard lengths. The duct has a cross section of 1½ inches x 6½ inches.



Headerduct is provided with removable capped access openings or with junction ring access units featuring outside adjustments to the finished floor surface.

The access top unit provides flush trim of linoleum, tile or other floor covering. Special access units accommodate terrazzo floor finish. A complete line of assembly parts is reported to meet all requirements for physical layout and for electrifying the cellular floor cells.

All raceway ducts for the underfloor systems are zinc protected by the hot-dip method of galvanizing; and the systems are listed by Underwriters' Laboratories, Inc.

Service fittings of solid die-cast aluminum, less than 3 inches high, are available with standard receptacles of 15-ampere to 50-ampere capacity, and

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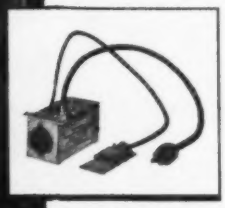

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with bushed openings for telephone and intercom use. These service fittings are being offered in decorative colors. Request NP1462.

WEST VIRGINIA MEET

Concluded from page 34

golf tournament for the men was in progress.

Re-elected to serve on the board of directors were: James C. Crane, outgoing president; Murrill Colburn of Marlinton; LeRoy N. Darling; W. Murray Smith of Clay; Delbert C. Dodrill of Laurel Point; and Nyle Scholl of Bluefield.

Serving their first terms as directors are: Robert Minear of Davis; and Ray Landon, and Don Feaster, both of Charleston.

The board elected these officers for 1961: President, Mr. Dodrill; first vice president, Mr. Colburn; second vice president, Mr. Feaster; and Mr. Minear, secretary-treasurer.

B. C. Telephone Readies Mountain 'Copter Service

A nameless mountain topped by $750,000 worth of microwave equipment will be reached by helicopter during British Columbia Telephone Co.'s winter maintenance of sites for trans-Canada telephone and television services.

A shift change every two weeks, weather permitting, has been scheduled for the relay station on a 6,900-foot mountain near Salmo. The station will be staffed by two men. The helicopter trips were initiated last winter to eliminate rugged travelling conditions and snow plowing of 18 miles of access road off a highway.

Snow depths have been recorded up to 25 feet and temperatures down to 25 below zero in that area.

The first shift, when snow closes the road in November, will be taken by workers Ken Pearson and Ben Jonkers, both of Nelson. Helicopter pilot Jim Grady, of Okanagan Helicopters Ltd., will fly a Hiller 12-E; and winter flights will continue until June 1, when road travel will be resumed.

During most of the winter, a landing site on the mountain top will be tramped into the snow and marked by red flags.

The station is the only site, of 13 in British Columbia, reached by helicopter to overcome extreme snow falls. Another station, on Dog Mountain near Hope, due to impossible terrain for roads, is reached year-round by aerial tramway. Six other stations are reached by snow vehicles during winter months.

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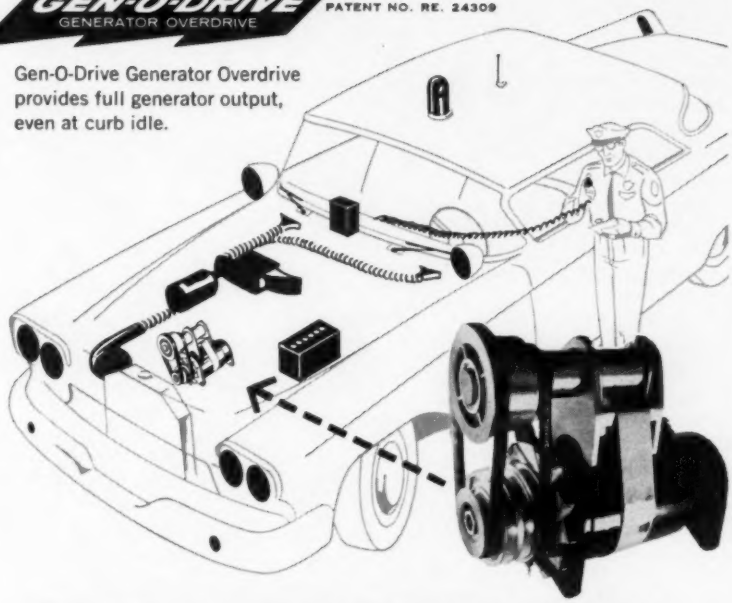

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ABC OF THE TELEPHONE

Concluded from page 21

the patterns in which transpositions are made at every pole. A change of terrain, a highway or river crossing or a pole line rearrangement may create a short span and result in the installation of a non-transposition pole. Ordinarily, this would not present any special problem where 10 wires are carried on 10-pin crossarms. The two extra wires in the R1-6 pattern require special treatment at the non-transposition poles.

One way of supporting the extra wires is to redrill the crossarm and install two pins and insulators on either side of regular pin positions 2 and 9, as shown in *Fig. 10A*. An easier way is to install a pinch bracket in positions 2 and 9 as illustrated in *Fig. 10B*. The resulting arrangement of the twelve wires on the crossarm of the non-transposition pole is shown in *Fig. 10C*.

R1C-5 and R1C-6 Transpositions. The R1C-5 and R1C-6 transposition patterns are the same as the corresponding R1-5 and R1-6 patterns, except for the wire arrangements used at special pattern poles number 25, 50, 75, 100, 125 etc. Special patterns generally are introduced at every 25th pole in any of the various transposition patterns. The introduction of a special pattern means nothing more than inserting a transposition in one pair of wires where a transposition would not normally be made. The special pattern also could result in a transposition being omitted. A number of special patterns are possible on a pole line with five or six pairs of wires.

Inserting a special pattern transposition at certain intervals is in keeping with the objective behind transposing open wire lines. As discussed previously, transpositions are used to change the relationship of wires in a pair and the pair with other pairs on the same pole line. The constant repetition of a transposition pattern tends to re-establish a new relationship between wires and between pairs. The regularity of the transpositions in a long pole line tends to amplify any new crosstalk or coupling aspects of a constantly repeating pattern. The answer lies in using special patterns at every 25th pole along the line.

The special pattern upsets the new relationship between the wires on the line. The effectiveness of the special pattern can be compared with the effectiveness of the initial transpositions.

The omission or insertion of a transposition at every 25th pole is one way of introducing a special pattern. Another way is to make a point transposition where other transpositions would extend over two spans, such as occurs with a tandem transposition.

Adapting Transpositions

The transposition pattern is upset whenever a pole or poles are added to or removed from an existing pole line. For all practical purposes, the effect of the pole line rearrangement is the same for most transposition patterns as follows:

(1) One Pole Added. Do not transpose the wires at the new pole. Generally the pole is added to provide clearance for a new crossing or for a similar situation. The new pole does not change the basic inductive characteristics of the pole line.

(2) One Pole Removed. Remove the transpositions at either the preceding or succeeding pole. The pole selected preferably should not be a special pattern pole (number 25, 50, 75, etc.) On some lines transpositions are made at every pole. Thus, two transpositions must be removed to maintain the balance between all the pairs in the line.

(3) One Pole Moved. Retain the existing transpositions.

(4) Two or More Consecutive Poles Added or Removed. Apply the transposition pattern to the rearranged section of the line. For example, if an odd number of poles are added, apply the transposition pattern to all but one of the new poles. Transpositions on poles not involved in the line rearrangement generally remain unchanged.

The application of these general rearrangement procedures would vary somewhat for pole lines in which transpositions are made at every other pole. The removal of a non-transposition pole would not require rearranging the transposition pattern because no changes in the pattern are involved.

Long Lines Plans Deep-Sea Cable Link in Caribbean

The American Telephone & Telegraph Co. announced plans on Oct. 26 for another link in the expanding network of oceanic telephone systems—a deep-sea cable in the Caribbean.

The proposed cable would extend some 390 miles between Puerto Rico and Antigua, via the islands of Virgin Gorda, Dog and St. Kitts (St. Christopher), the Long Lines Department of AT&T said in an application to the Federal Communications Commission.

It would have a capacity of 84 voice circuits and connect with the submarine telephone system placed in service this year between Puerto Rico and the United States mainland.

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Plans call for the new cable to be jointly constructed and owned by AT&T and Cable & Wireless (West Indies) Ltd., a British company. Each would have a half interest in the system.

"The proposed facilities will strengthen and improve the existing communication system in the Caribbean area," Long Lines noted in its application to the FCC for authority to construct and operate the system.

"In addition," stated Long Lines, "the proposed cable will introduce diversification into the communications system serving the Caribbean area. Other than Puerto Rico and Cuba this area is now reached from the mainland entirely by radio circuits."

Virgin Gorda, Dog, St. Kitts, and Antigua are part of the Leeward Islands of the West Indies, situated southeast of Puerto Rico.

The cable would make available high-quality circuits to interconnect the local communications facilities of the islands and the worldwide network. Also, the cable would be available for defense needs.

"The demand for telephone service on these routes is expected to increase substantially with the provision of the proposed cable facilities and the growth of the tourist business in the Caribbean area," Long Lines said.

The Puerto Rico-Antigua system would be a single coaxial cable equipped for two-way transmission. The schedule calls for it to be laid by the end of 1961.

Plan Microwave System To Serve Syrian Cities

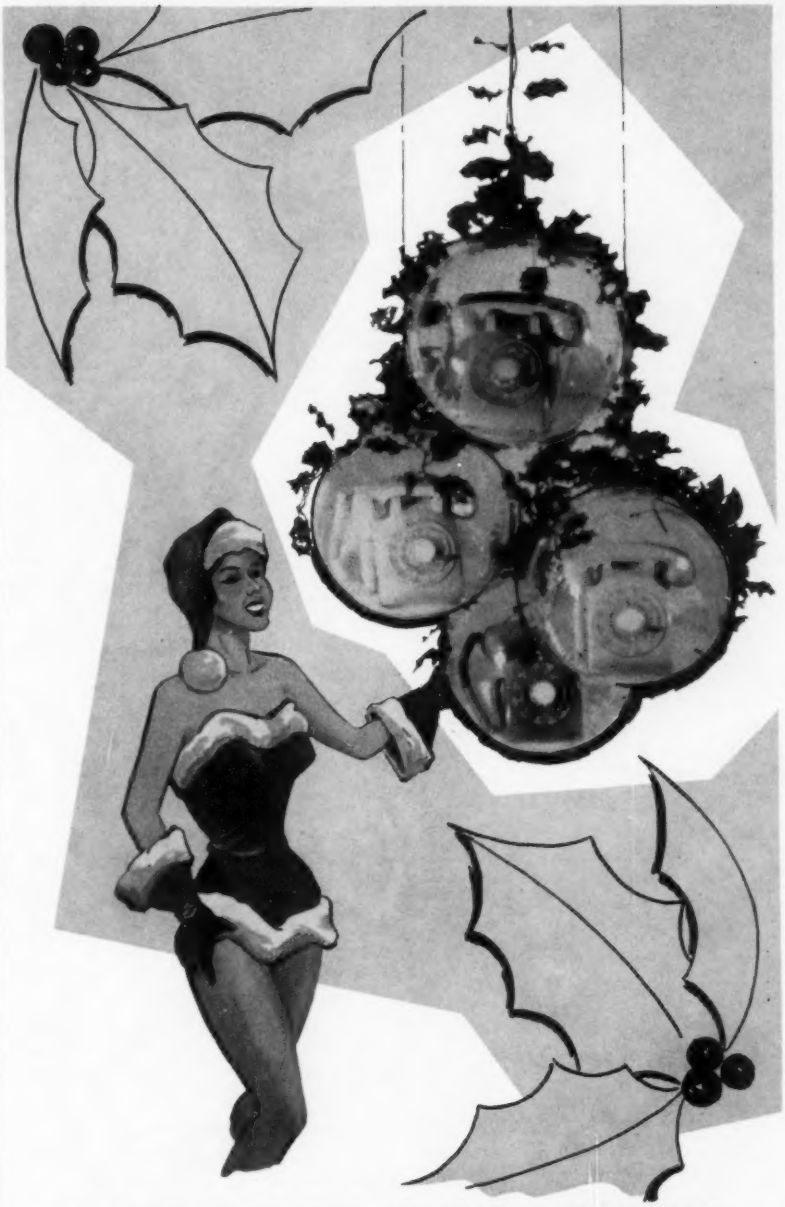
A long-distance telephone and telegraph system, with capacity for future expansion, is planned for the Syrian region of the United Arab Republic.

A U. S. government loan of 2.5 million dollars has been made by the Development Loan Fund to the Posts, Telegraphs and Telephones Administration of the Syrian region with headquarters in Damascus.

Proceeds will be used to provide a microwave system to serve the major cities of western Syria and to enlarge the capacity of an overland wire system serving eastern Syria.

The microwave system will consist of eight stations with terminals at Damascus, Aleppo and Latakia. Radio equipment with an ultimate capacity for 600 telephone channels will be installed, although the initial installation will consist of about 120 channels at the Damascus and Aleppo terminals.

The open-wire system will provide circuits from Aleppo to four cities in eastern Syria.



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A group of students from Nacional Instituto Politecnico of Mexico shown during a recent visit to Automatic Electric Co., Northlake, Ill. Each year, the company plays host to this group and a group from the University of Mexico. Pictured with the students is Harry C. Jones (seventh from left, row one), vice president and sales manager for Automatic Electric International, Inc.

All-Dial by '70 Aim for Saskatchewan Telephones

An expanded program of conversion of manually-operated telephone offices to dial operation, commencing next year, was announced on Oct. 28 by the Minister-in-Charge of Saskatchewan Government Telephones, the Hon. C. C. Williams. He said the program would aim at complete dial telephone service for the province by 1970.

Mr. Williams said plans of Saskatchewan Government Telephones must provide for a long-term program of converting local manual offices to dial operation, for ultimate coordination with the operator or customer toll dialing plans. To make the program economically feasible, as many subscribers as possible must be included.

He said that of the 179,244 system-owned telephones in the province, 78.15 per cent are now dial-operated, while of the 50,510 rural telephones connected to system and agency exchanges, only 11,979 or 23.7 per cent, are of the dial type.

The telephone industry in North America is well advanced in providing automatic service, Mr. Williams continued, and Saskatchewan Government Telephones is following this industry trend. Recent studies of costs of automatic and manual operation show that in the broad picture, it is advisable to embark on an expanded program of converting manual offices to dial offices.

This program will convert about 300 telephone offices to dial, and will ultimately bring modern, speedy telephone service, with all the benefits of customer and operator distance dialing, to more than 23,000 S.G.T. telephones and some 38,000 rural telephones, the Minister explained.

The program will also improve and extend 24-hour service to more subscribers. The volume of automatically-switched traffic to toll centers will be increased, an essential feature for the economical introduction of customer toll dialing (which is now planned for 1963-64). In addition, dial conversions are resulting in an increase in the number of telephones in service.

Mr. Williams concluded his announcement by stating that manual offices at Kinistino, Shellbrook, Birch Hills, Star City, Perdue, Lake Lenore, and Annaheim would be the first to be included in the 1961 accelerated conversion program proposed by Saskatchewan Government Telephones.

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It is understood, other points will be announced as engineering and cost studies are completed.

County Government Using Expanded Communications

The expanding activities of local governments are causing them to become larger and larger users of communications services. One mammoth example is the Los Angeles County, Cal., Department of Communications, the engineering and administrative offices of which have recently been moved into new quarters.

The communications and electronics group serves the county of Los Angeles with engineering planning, installation and maintenance of everything electronic, plus planning, coordination and operation of telephone, teletype, fire alarm and messenger service within the county.

In addition to 65 telephone company leased switchboards throughout the county, with associated five-digit switching equipment for inter-building and inter-area dialing, the county also owns and maintains over 1,370 physical circuit pole line miles, plus 630 miles of telephone carrier circuits for fire dispatching. Ten dispatching centers serving county fire, law enforcement, highway and public safety agencies have been built and are maintained by the Department of Communications.

The county of Los Angeles pays a 2½-million-dollar-a-year telephone bill.

The electronic phases of county communication include the radio and microwave systems serving law enforcement, fire, air pollution, highway, water and sewer, ambulance and lifeguard agencies. Over 1,800 mobile radio units, 63 base stations, 14 microwave links, 2,300 dictating machines, 500 public address systems in courts, parks and county auditoriums; 450 television sets in hospitals and institutions, numerous electronic instruments and devices are in daily operation serving the county of 6 million people.

The communications department has 339 employes ranging from high-level electronic and telephone engineers to several levels of technicians, linemen, telephone operators, messengers and clerical positions.

The department engineers, builds and maintains but does not operate communication and electronic systems, except in the case of the 65 telephone switchboards throughout the county which are staffed with the department's telephone operators.

The Department of Communications is just six years old, and with an exploding population in southern California, is among the state's leaders in

NUMBER 45 - *For telephone or telegraph long-line construction. Double petticoat with square groove for firm wire support.*

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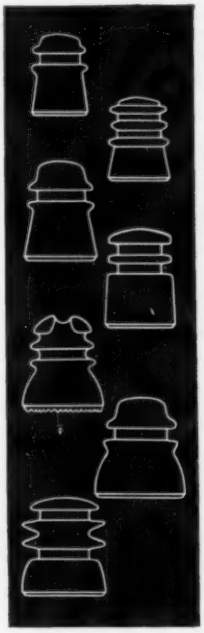

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PENGO BORING HEADS for welding to your present auger flights.

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applying modern electronic, automation and communication methods to cope with the increasing governmental work load, while reducing costs through the increasing use of data processing, switching techniques and electronic office equipment.

Azores Site for Study of Earth's Magnetic Field

Flutters in the earth's magnetic field, which are a limiting factor in space communications—as with earth satellites, for example—will take three General Dynamics scientists to the Azores this fall, under sponsorship of the Office of Naval Research.

There, on a rocky, windswept beach, they will make tape recordings of magnetic waves, some of them of such low frequencies that their wavelengths are interplanetary in magnitude. Later, these recordings will be brought back to Rochester, N. Y., for analysis and study. It is possible that they may hold a key to the extraterrestrial influences which cause these magnetic disturbances—disturbances which occasionally become so severe that they disrupt not only radio, but wire-line communications on earth.

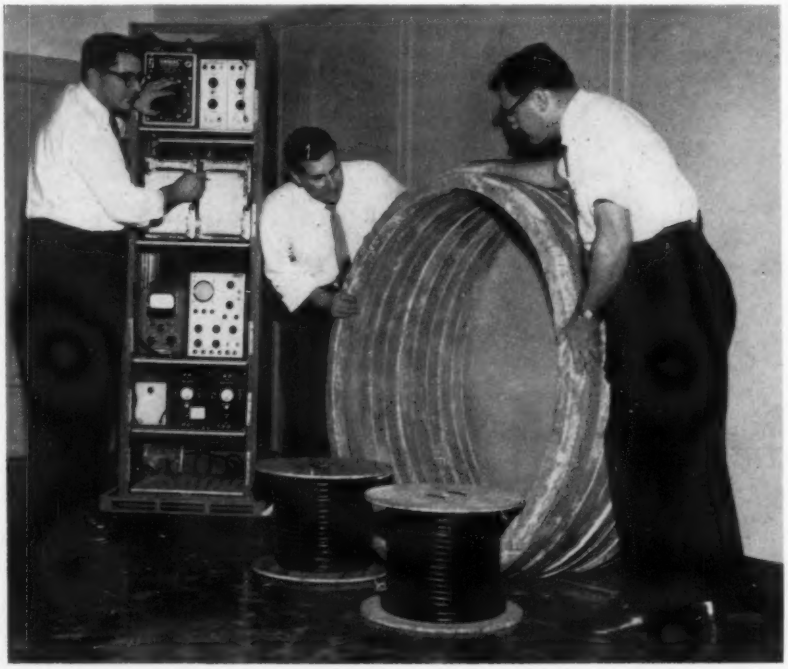
The team, all in the research laboratories of General Dynamics' Stromberg-Carlson Division, will be headed by Dr. Raymond A. Santirocco, astrophysicist. His team associates will be Gilbert C. Foster, a principal engineer, and Frank Geimer, engineering aide.

The team will leave Rochester in the fall, and will fly to Santa Maria Island, in the Azores group. The airfield there is about 7 miles from the shoreside site where they will set up their gear. The scientists are still not quite sure how they're going to cover that last 7 miles, across extremely rugged and rocky terrain.

They hope to be back home in time to celebrate Christmas with their families.

In preparation for their studies, the research trio already has spent most of its time for the past several months fabricating the special antennas that will be the "eyes and ears" of their equipment. These are 10 large loops of fine copper magnet wire, each 4 feet in diameter, and each loop containing 5,000 turns—which figures out to approximately 12 miles of wire per loop. After being wound on a special jig fitted to a lathe in the division's model shop, the loops were individually sealed in an epoxy plastic as a protection against damage and moisture.

For the magnetic measurements, the loops will be carefully aligned and bolted between two plywood faceplates. Brass bolts will be used, to avoid the presence of any magnetic materials near the antennas. Three sets of measurements will be made, one with the



Equipment which they will take to the Azores this fall for a study of variations in the earth's magnetic field is shown being prepared and tested by the research team in General Dynamics' Stromberg-Carlson Division. From left are Dr. Raymond A. Santirocco, astrophysicist who is directing the project, Frank Geimer, engineering aide, and Gilbert C. Foster, principal engineer.

loops arranged vertically in a north-south plane, another in an east-west plane, and the third with the loops horizontal.

There were a number of reasons for the selection of Santa Maria Island as the site for this project, according to Dr. Santirocco. It would be preferable, he explained, to make the measurements on a fixed, non-magnetic platform in the middle of the ocean—but no such platform exists. It would be impracticable to try to use a ship, not only because of the ship's magnetic characteristics, but even more because it is necessary to hold the antennas absolutely motionless for many hours during the tests, Dr. Santirocco said.

Santa Maria Island is a reasonably good substitute for a mid-ocean platform, he said. It is located at the right latitude. It has an isolated beach where the equipment can be set up and operated virtually at the water's edge. And, there is no large electric generating plant or distribution line on the island which might create local magnetic disturbances.

The Stromberg-Carlson team will take its own portable generating set to provide the electric power for operating the test equipment, and will locate it about a quarter of a mile away, using shielded cables to supply power to the measuring equipment.

Brown Named Consultant To Highway Trailer

Howard D. Brown, formerly with the general department of the American Telephone & Telegraph Co., has been named consultant to Highway Trailer Industries, Inc., William J. Mesler, executive vice president in charge of operations for Highway, recently announced.

Mr. Brown, a 38-year veteran of the AT&T engineering staff, was most recently with the Bell System fleet in design, development, and operation of motor vehicles and construction apparatus.

He will specialize in the design, operation and application of public utility equipment made by Highway at its Stoughton, Wis., plant. Highway is a major producer of telephone and power line construction equipment, maintenance truck bodies, telephone installation truck bodies, pole and cable reel trailers, earth-boring machines, winches, and power take-offs.

Mr. Brown is a graduate of Iowa State College with a B.S.E.E. degree, and a member of the Society of Automotive Engineers. He will make his headquarters in Atlantic, Ia.

Highway Trailer Industries, also has plants in Edgerton, Wis.; Hazleton,

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Alaska Company Names Two to Plant Posts

Appointment of two veteran telephone men to new supervisory positions with Trans-Alaska Telephone Co., An-

C. J. ADAMS

chorage, was announced during the week of Oct. 17 by John E. Field, company president.

Charles J. Adams, veteran ITT Kel-

E. D. KIDD

logg employe and former equipment-traffic engineer for the City of Anchorage telephone system, has been named inside plant superintendent.

Earl D. Kidd, formerly with General Telephone Co. of the Southwest, has assumed the post of outside plant superintendent.

With Trans-Alaska now operating or building telephone exchanges to serve more than a score of Alaskan communities from the Arctic Ocean to the Gulf of Alaska, the company's rapid growth required creation of the new executive posts, according to President Field.

A 36-year telephone veteran, Mr. Adams began his career as an installer for the Automatic Electric Co., in 1924.

He was communications maintenance supervisor for the Rock Island Railroad from 1933 to 1946. Prior to joining the City of Anchorage system in January this year, Mr. Adams served ITT Kellogg as a development engineer and as West Coast field engineer.

He engineered and supervised the original installation of Kellogg equipment in the Anchorage telephone system in 1949, and supervised installation of the Puerto Rican telephone system in 1953.

A veteran of the Army Signal Corps with World War II experience in North and East Africa, Mr. Kidd went to Alaska as a Philco Corp. technical representative. He had been an area engineer for the General Telephone Co. of the Southwest in south Texas from 1955 to 1959.

Altec Lansing Introduces Family-Size Telephone Booth

Walt Disney's famed Disneyland has introduced an innovation in public telephone communication — the family-size telephone booth. Two such units, using equipment manufactured by the Altec Lansing Corp., are now in operation at the American Telephone & Telegraph Co. exhibit located in Disneyland's "Tomorrowland" area.

Public use and revenues derived have already exceeded expectations. Several more of these unique telephone installations are reported planned for the near future.

Indications are that these facilities, which are called "chatter boxes," are suited for fairs, conventions, resort areas, airports, train stations and other locations where large groups congregate away from home.

The chatter box is a ventilated 7 foot-high enclosure having a floor space of 5 feet by 6 feet. It contains a bench where four people can sit, a chair for a fifth person, additional standing room for two or three more, and a small table.

From each sitting or standing position in the booth, outgoing and incoming conversations are clearly audible. The standing room may be used instead to allow a baby buggy to be wheeled into the booth, so that it is not necessary to leave an infant outside while the remainder of the family is making a telephone call.

A concealed microphone in the wall and a concealed loudspeaker in the

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Used for pressurizing aerial and underground telephone cables, the Model RC Dehydrator Automatic is designed for small installations of 80 to 100 miles of cable. It is a floor mounted unit. Operating voltage is 115/220 volts, 1 phase, 60 cycle, and the output is 700 standard cubic feet per day maximum, with a dewpoint of —70°F.
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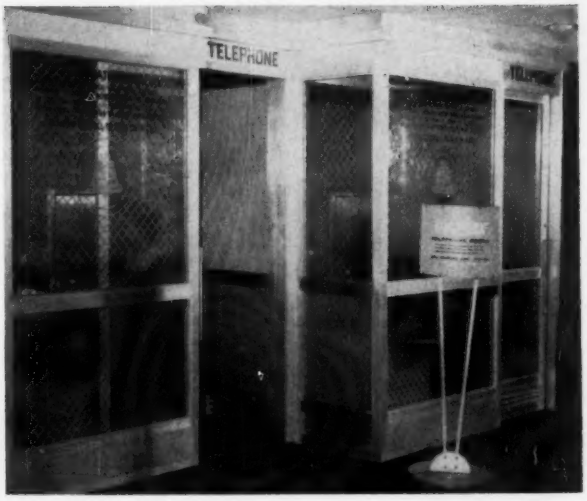

LEFT PHOTO: These two young women are seated in new family-size telephone booth called the "Chatter Box." It is one of two units now in operation in Disneyland, which feature Altec Lansing microphone, loud speaker, and compressor amplifiers. The capacious unit provides seating space for five persons, standing room for three. Table at center contains "on" button; coin box can be seen on wall. RIGHT PHOTO: Exterior view of the 7-foot high booth gives idea of its well-ventilated character and flexible space where four, five or more persons may wish to participate in telephone conversation. Public response to these units, and revenues derived, have already exceeded expectations.

ceiling are used for talking and listening. Controls consist of a dial, a coin box and an off-and-on button located on the center table. The cost to a caller is the same as for standard telephones.

To put the system into operation, the caller pushes the on button, which is equivalent to taking the receiver off the hook, places a dime in the coin box, and dials the desired number, or the operator.

The Altec Lansing M-20 microphone system and 755 A 8-inch speaker are combined with Altec compressor amplifiers to maintain uniform talking and listening levels regardless of the distance of the call. The quality of voice reproduction assures quick recognition of all voices on both local and long distance calls.

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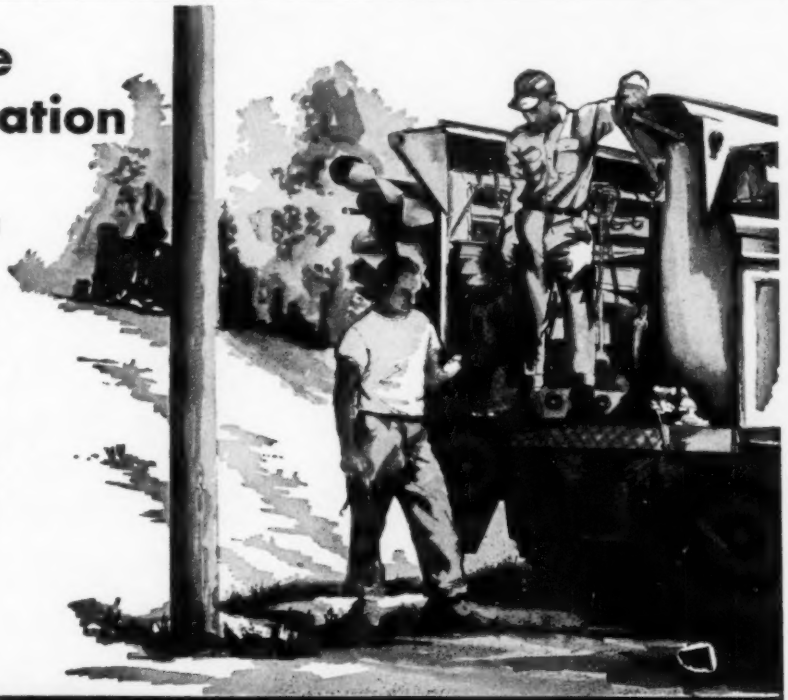

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IN THE NATION'S CAPITAL

Continued from page 18

why doesn't Mr. Summerfield spend his time trying to improve the postal system so that a letter can be delivered from one section of a metropolitan area to another in something less than two or three days?"

It is easy to sympathize with the telegrapher union boss over the prospect of so many thousands being thrown out of work by an automatic gadget, but technological unemployment, due to new inventions, has been going on from time immemorial. We can still read of riots in France and England centuries ago when weavers stoned looms for making cloth mechanically, but eventually to no avail.

The only consolation is that technological unemployment, while it undoubtedly can cause serious dislocation of work, never strikes with a sudden wide impact. There is usually plenty of warning in time for transition. The historical experience is that, over the long-run, new inventions and techniques create far more jobs than they destroy.

Summerfield said the Post Office and about seven private firms have spent about two years and nearly 4 million dollars to develop the prototype equipment. How soon the "speed mail" system can go into public use, he said, depends on how soon it can be perfected and on Congress' willingness to pass legislation creating a new mail class, with its own rate scale. His earliest estimates were "two to three years."

Dial 999 for Emergency

In this pre-election lull (at least as these lines were written), it might not be out of place to talk about Christmas toys. This month a well-known and somewhat fabulous character in the Nation's Capital, Rufus S. Lusk, veteran real estate operator of Washington, D. C., made his contribution to Santa Claus in the form of advice for those plastic toys which resemble telephones. Lusk is also brother of the U. S. Senator from Oregon, president of the Washington Taxpayers' Association, head of Washington's gourmet club (the members of which take as much as three hours to polish off a 24-course dinner), and an extraordinarily diligent writer of letters to newspaper editors. He has been providing conversation and amusement for Washington adults for nearly two generations and now he is interesting himself in the kiddies.

To make a long story short, Lusk wants all toy telephones to have an emergency number on their dials. Re-

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cently he took one of his numerous trips to England, ostensibly to study Scotland Yards' police dog program. But somehow he also got interested in the universal emergency dial number—"Dial 999"—which is used all over England and Ireland. To make an emergency call for an ambulance, police, or the fire department, the caller just dials 999. This alerts a central emergency switchboard so that a trained operator (trained in dealing with emergencies, that is) answers "Emergency, which service?" If the caller is a child or an older person in such difficulty as to be incoherent, the operator tries to figure out what the trouble is and acts accordingly.

When Lusk came back from London he found that Washington, D. C., has six different emergency numbers listed—ambulance, metropolitan police, District of Columbia fire department, the FBI, the park police (Interior Department), and the U. S. Secret Service. Not many Washingtonians, he finds, knew they had that many emergency numbers to call, and very few even knew one of them by memory.

It should be stated, in fairness, that the local telephone company in Washington, D. C., as elsewhere has an arrangement whereby in dialing "O" for operator *all* kinds of emergency calls can be channeled to the proper agency.

But Lusk finds this takes longer; and again very few people seem to know about it or use it, and for other reasons he likes the British system best. Using his own time test, he is also partial to the British number "999," although that would not be feasible in many metropolitan areas in the United States including Washington.

The Christmas angle consists of the fact that toy plastic telephones made for children in England have a short message on their dials: "Emergency—Dial 999." Thus from babyhood children are taught this number for any kind of emergency. Lusk did not say how often the little darlings have dialed that number on a real telephone just for laughs, but he did refer to cases where four-year olds had made life-saving telephone calls.

Right now Lusk is busy trying to dragoon the three different branches of Washington police, the FBI, the fire department, etc., into conformity. (The Chesapeake & Potomac Telephone Co. is already reported to have surrendered or at least is willing to make concessions.) If he does not get his way, we can at least be certain that we will hear more about it because Lusk is one of the most persistent open-letter writers that the local newspaper editors have ever encountered.

TECHNICAL BRIEF NO. 60-2

By D. L. DAVIES, *Manager, Technical Dept.*
Wood Preserving Division
Koppers Company, Inc.

PRESERVATIVE PENETRATION IN SOUTHERN PINE POLES

Emphasis in the past has been placed on the importance of preservative retention in poles. Penetration is equally important. The data on which present AWPA penetration requirements are based are reviewed below.

INITIAL SPECIFICATIONS

In 1924, the American Wood-Preservers' Association adopted its first specification covering pressure treatment of poles. This specification required that "all of the sapwood and as much of the heartwood as practicable" be penetrated. The method for determining penetration was not clearly defined.

RELATIONSHIP BETWEEN PRESERVATIVE PENETRATION AND DECAY

In the early 1930's AWPA Committee 5-5-1, "Poles-Pressure-Treatment" began an extensive inspection of pole lines to determine whether there actually was any relationship between preservative penetration and decay. The investigation included a careful examination of 2,393 southern pine poles which had been in line ten years or less.

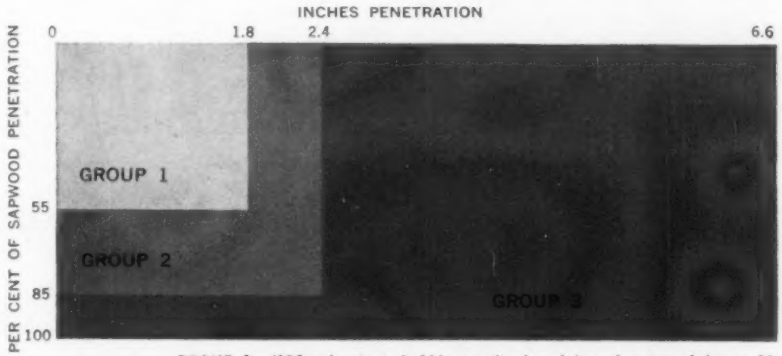
Sections of the chosen lines contained from 100 to 200 or more poles that had been set consecutively in a period of one year.

Each pole was tested by sounding with a hammer or a hatchet. When hammer blows produced a dull tone, the suspicious area was sampled with an increment borer, so that sapwood depth, penetration, and decay could be determined in that area. On all poles which proved sound, increment borer cores were taken 4½ feet above the ground line for measurement of sapwood depth and penetration.

TEST RESULTS

Table below shows that there were *no* failures in Southern Pine Poles with at least 2½ inches of penetration *or* 85% or more of the sapwood penetrated.

As a result of this study, the AWPA, in 1937, revised the standard for southern pine poles to require a minimum penetration of either 2½ inches or 85% of the sapwood.



GROUP 1—(286 poles tested) 223 contained no internal sapwood decay, 28 contained internal sapwood decay, but were serviceable and 35 failed due to internal sapwood decay.

GROUP 2—(324 poles tested) 318 contained no internal sapwood decay, 5 contained internal sapwood decay but were serviceable, and only 1 failed.

GROUP 3—(1783 poles tested) no internal sapwood decay.

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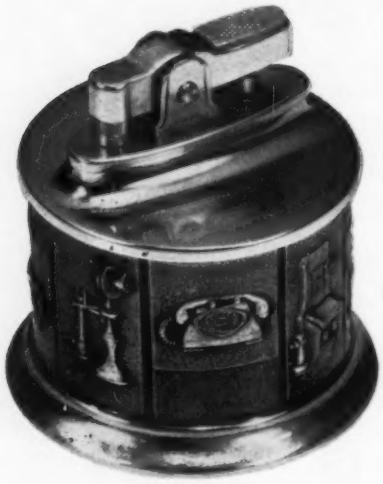

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Helpful Literature

TECHNICAL JOURNAL — Automatic Electric's newest product, the Starlite telephone, is featured in a current issue of the *Automatic Electric Technical Journal.*

The new instrument is one-half the size of standard desk telephones and features a soft glowing dial light.

Also in the AE *Technical Journal,* a report entitled "Expanding the Scope of DDD Service" outlines the facilities needed to serve person-to-person, collect and special instruction DDD calls. Direct Distance Dialing is also spotlighted by an article on "Common Senders for Type 59 SATT."

Other technical presentations include "The Automatic Equipment Routiner," "Emergency Reporting System" and "The Electronic Interrupter." Request HL613.

•

DECADE COUNTER DATA SHEET— Burroughs Corp. has issued a detailed four-page booklet on its new BEAM-X® switch-transistor decade counter modules, types DC-111-A and DC-111-B.

Fully illustrated, the data sheet contains mechanical and electrical specifications, as well as descriptions of the output capabilities of the units.

Transistor circuits for use with the counters are also included. Request HL614.

•

ELECTRONICS CATALOG—Allied Radio Corp. announces the release of its 1961 catalog of electronic equipment for industry. Allied's new 576-page catalog lists over 48,000 items and includes 240 pages in rotogravure.

There are extensive listings of parts and equipment for research, production requirements, and industrial maintenance.

Detailed listings include:
Two-way radio communications equipment, closed-circuit TV systems, sound powered telephones.
Semiconductors and diodes, transistors, panel meters, nuvistors, termisters.
Standard and special-purpose electronic tubes, miniature industrial fans, ultrasonic cleaning equipment.
Test instruments, voltage stabilizers, transformers, attenuators and controls.
Resistors, capacitors, printed circuit components, potentiometers.
Rheostats, relays, switches, connectors, rectifiers, fuses.
Tools, wire and cable, photoelectric components.
Counters, motors, program clocks, timers.
Batteries, sockets, generators.
Power supplies, and a wide variety of other electronic equipment and components.

There is a presentation of new Knight U.L.-approved public address amplifiers used in systems ranging from 10 to 60 watts, including a new compact, 10-watt cordless portable P.A. system that features transistorized operation. Additional P.A. equipment included is for indoor and outdoor paging, and plant-wide public address. Also featured are hand-held battery-powered megaphones for yard use.

This Allied electronics catalog contains a large section on high-fidelity equipment (stereophonic and monophonic amplifiers and tuners, speakers and enclosures, pick-up arms and car-

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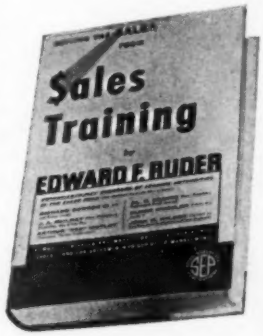

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tridges, microphones, accessories) and complete hi-fi systems for plant music distribution. There is also a special selection of stereophonic records and tapes from well known labels.

The Allied Knight-Kit line includes professional-quality instruments such as oscilloscopes, tube testers, capacity checker, transistor and diode checker, signal tracer, audio generator, VTVM and VOM kits. Two newly developed units for critical laboratory applications are shown—a 5 inch dc lab scope with choice of plug-in interchangeable vertical amplifiers (high-gain, wide-band or dual-trace); and a new ac VTVM, with self-seeking range selector that automatically selects the proper range when the probe is touched to the circuit under test. Hi-fi fans will find several new Knight-Kit components, including a stereo record/playback preamp. Other kits in the catalog are designed for experimenters, hobbyists, radio amateurs, and electronics training.

The technical book section includes leading publications covering electronics, all phases of radio, and electricity.

Other listings include: florescent lighting units, lamps and accessories; communications equipment and radio amateur gear; phonographs and accessories; and complete tape recording equipment. Request HL615.

PRODUCTS BOOKLET—American Chain & Cable Co.'s 15 separate divisions and eight subsidiary companies maintain 25 plants located in 22 cities in the United States, Canada and England. They produce a wide variety of products as shown in ACCO's latest product booklet.

Included are:

Chain, tire chains, wire rope, push-pull controls.

Cable assemblies, steering controls for boats, wire, strand.

Chain link fence, welding wire, electric and chain hoists.

Bronze, iron and steel valves, lawn mowers, hardness testers, nibbling machines, pressure gauges.

Abrasive cutting machines, abrasive cutting wheels, bolts and nuts.

Malleable iron and steel castings, automatic controlling, recording electronic and telemetering instruments.

Socket screws, digital data logging equipment.

Custom engineered centers and alarm annunciators, positioning and metering control systems.

The range of American Chain & Cable products, the company states, is so diversified that one or more of them will be found serving a useful and economical purpose in almost every type of industry or service. Included areas comprise communications; public utilities; manufacturing plants; transportation on land, sea, and air; construction and public works; and defense.

Field representatives and engineers of ACCO operate from plant and district sales offices in 35 cities in the United States, Canada and England, the booklet reveals. Request HL616.

•

TRUCK COST RECORDS—Truck cost record books and forms for driver daily reports to assist truck users in evaluating the performance of their equipment are offered by the motor truck division of International Harvester Co.

The truck cost record book consists of 20 pages, each book allowing an accurate record to be kept of all fixed, operating and maintenance charges against one truck for one full year.

The driver daily report may be used in conjunction with the truck cost record book. It provides space for reporting information such as number of trips, trip time, number of stops, mileage, loads, and fuel and oil consumption. Request HL617.

•

BORING UNIT—The A295—and air powered boring unit offered by the Ka-Mo Tools Department of the Kwik-Mix Co.—is the subject of a new bulletin released by Kwik-Mix, a division of Koehring Co. The A295 boring range is said to vary from 125 feet of 8-inch diameter hole to 50 feet of 30-inch diameter hole . . . vertical, angular, and horizontal boring.

The six-page, two-color bulletin illustrates and describes the unit, presents a capacity chart, pictures field applications, and discusses various types of cutting heads.

The bulletin points out that while the A295 is suited for pipeline work, sewers, and pre-boring for piling, the unit can be used in electrical, water, gas, municipal and railroad work.

The A295 consists of an 18 hp motor, 12.2 to 1 gear reduction, forward and reverse control valve, and an automatic pressure lubricating pump. It can be used with a wide range of cutting heads and auger sizes. Request HL618.

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LARGEST DATA-PHONE SYSTEM

Continued from page 26

the closest to a "universal" system because of the large number of business machines designed to work with it. These currently include Bell System 1,000 words-per-minute Teletype, RCA High-Speed DASPAN, Teleregister, several IBM Teleprocessing systems (Transceiver, 1009, 7701) and Digitronic Corp.'s new Dial-O-Verter. Among them, these machines offer the choice of punched tape, magnetic tape, punched cards, computer-to-computer or interrogation of central computer.

Teleregister Corp. has developed two electronic systems designed to work with Data-Phone 200. One of them—a completely automatic savings account system known as Telefile—is being utilized by Howard Savings Institute of Newark, N. J. Teller machines connected with Data-Phone transmit all transactions over private lines to centralized electronic memory devices. This type of system also is being set up for banks in New York and Connecticut.

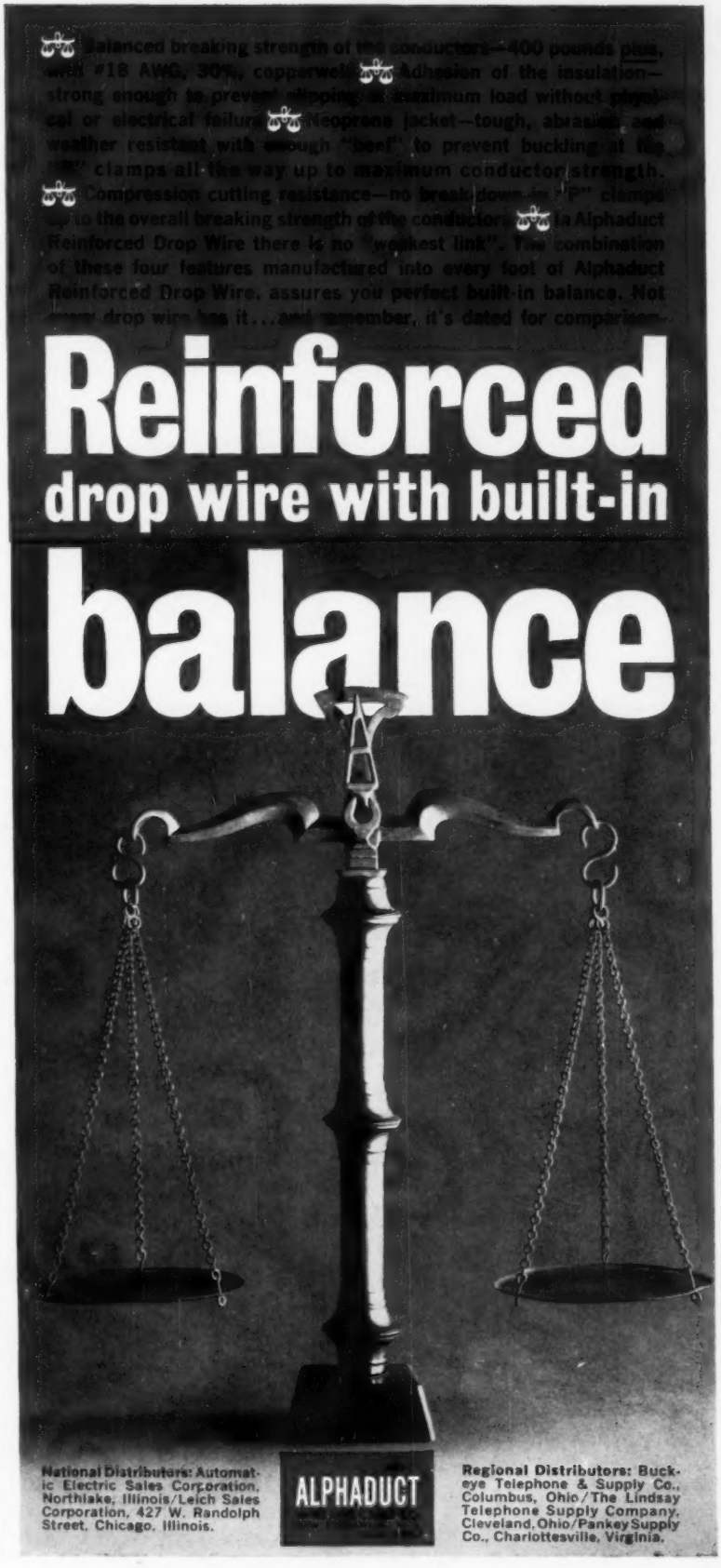
Data-Phone 400

Data-Phone 400 is a compact set, encased in a housing similar to the Bell System's Call Director.

Data-Phone 400 has a top speed of 20 characters per second or about 200 words per minute. It is primarily a one-way data gathering device. Business machines designed to work with Data-Phone 400 now are in various stages of testing and production by several companies. Western Electric pioneered in this area with the development of a card reader which it has licensed to several manufacturers who will have it available by the middle of 1961.

Development of the card reader was brought about through Western Electric's search for better ways of handling inventories and supply orders. When ordering supplies from Western Electric, a person first inserts his identification card in the card reader, establishing his authority to order materials. Then he inserts cards corresponding to the items desired. Various pieces of information, such as quantity desired, are designated by pressing numbered keys on the top of the device. This eliminates costly errors caused by handwritten orders and also speeds up delivery of materials. Western Electric plans on installing a large card reader system in its own plants.

Presently, Data-Phone 400 works with the IBM 1001 card system which uses the punched card method of gathering data. It will connect users to data processing centers in stores, main offices and warehouses where orders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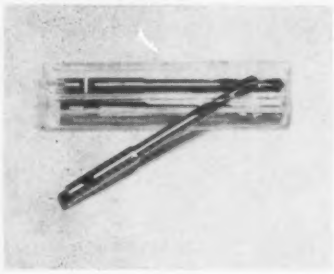

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can be recorded, merchandise routed, checks written and bills prepared—all automatically.

Data-Phone 600

Looking to the immediate future, the Bell System has developed Data-Phone 600 to be used with business machines for transmitting handwritten messages and drawings. Data-Phone 600 is the connecting link for telewriting devices.

Flexibility and varsatility are among the main features of all four Data-Phone sets. They work over private as well as regular telephone circuits. Customers can utilize and pay for as much or as little service as their business requires. Data-Phone service can be furnished anywhere in North America where there are telephones—practically everywhere.

Local or long distance charges for Data-Phone calls are based on the same rates as ordinary telephone calls. In addition, there is a moderate monthly charge for the Data-Phone sets. As an optional service, unattended arrangements are available. Information can be stored during the day and transmitted at night, thus making it possible to take advantage of lower long distance rates.

Data-Phone was first introduced early in 1958 on a trial basis. Since then, there has been a continuing effort by the Bell System and business machine manufacturers to develop newer and better equipment to provide one of the most important tools of modern data communications.

Twin Coach Purchases York-Hoover; Officers Named

The Twin Coach Co. has purchased the body division of the York-Hoover Corp. of York, Pa., it was announced on Oct. 12 by William H. Coleman, president of Twin Coach.

The division will operate as a subsidiary of the parent company under the name "York Body & Equipment Co."

John J. Lee has been named president; Walter D. Battersby, vice president and general manager; Emile L. Dumas, vice president and treasurer; George R. Hecht, vice president; Charles I. Ziegler, vice president; and James L. Hesburgh, secretary.

The acquired division, which employs approximately 250, manufactures truck bodies, hydraulic and electro-mechanical devices for utility companies, and electronic equipment shelters.

The acquisition represents a further diversification by Twin Coach in the general transportation and missile field, Mr. Coleman stated. He said the purchase expands the company's product line, and by so doing, brings the company into contact with a number of new customers.

Twin Coach manufactures major aircraft sub-assemblies and missile components, shipping containers, and electronic shelters at its Buffalo headquarters. The company operates a special products division, established in August, 1960, in Waverly, N. Y. This division manufactures the body and components for the American Motors Corp. "Mighty Mite" vehicle, and utility trailers for the U. S. Army Ordnance Department.

The company's service parts division, located in Kent, O., sells replacement parts for buses and other vehicles manufactured by the company from 1927 to 1956.

Tench Vice President-Sales Gould-National Batteries

The appointment effective Nov. 1, of John Robert Tench as vice president in charge of sales of industrial batteries has been announced by Fred W. Roth, president, Gould-National Batteries, Inc. Mr. Tench will make his headquarters in Trenton, N. J., and will direct sales of industrial batteries throughout the country.

J. R. TENCH

He succeeds M. W. Heinritz, former vice president of industrial sales. Mr. Heinritz will remain with the company as a vice president and will be associated with the industrial division in an advisory capacity.

Mr. Tench has held several executive positions with Gould, the most recent being that of vice president-personnel and labor relations. In June, 1959, he was transferred from St. Paul, Minn., to Trenton.

Prior to joining Gould, he was asso-

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ciated with Follansbee Steel Corp. and the Blaw Knox Co.

He is a graduate of the University of Pennsylvania and of Tulane University.

Mr. Tench is a native of Pittsburgh. He holds membership in several organizations including The American Iron & Steel Institute, and The American Management Association.

Zippertubing Mfg. Moved Into New Headquarters

The Zippertubing Mfg. Co. has moved to new and larger quarters at 13000 South Broadway, Los Angeles 61, Calif.

Rapidly increasing demand for Zippertubing cable jacketing and shielding products, used by the communications, electronics, aircraft, and missile industries necessitated the move to larger quarters, the company stated.

The new building is a two-story structure with a total of 20,000 square feet. Architecture makes ample use of glass and stone imbedded in concrete. New production facilities more than double the capacity of Zippertubing, it is reported.

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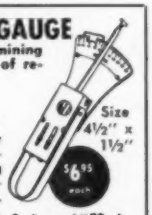

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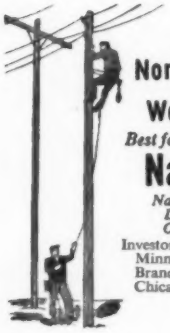

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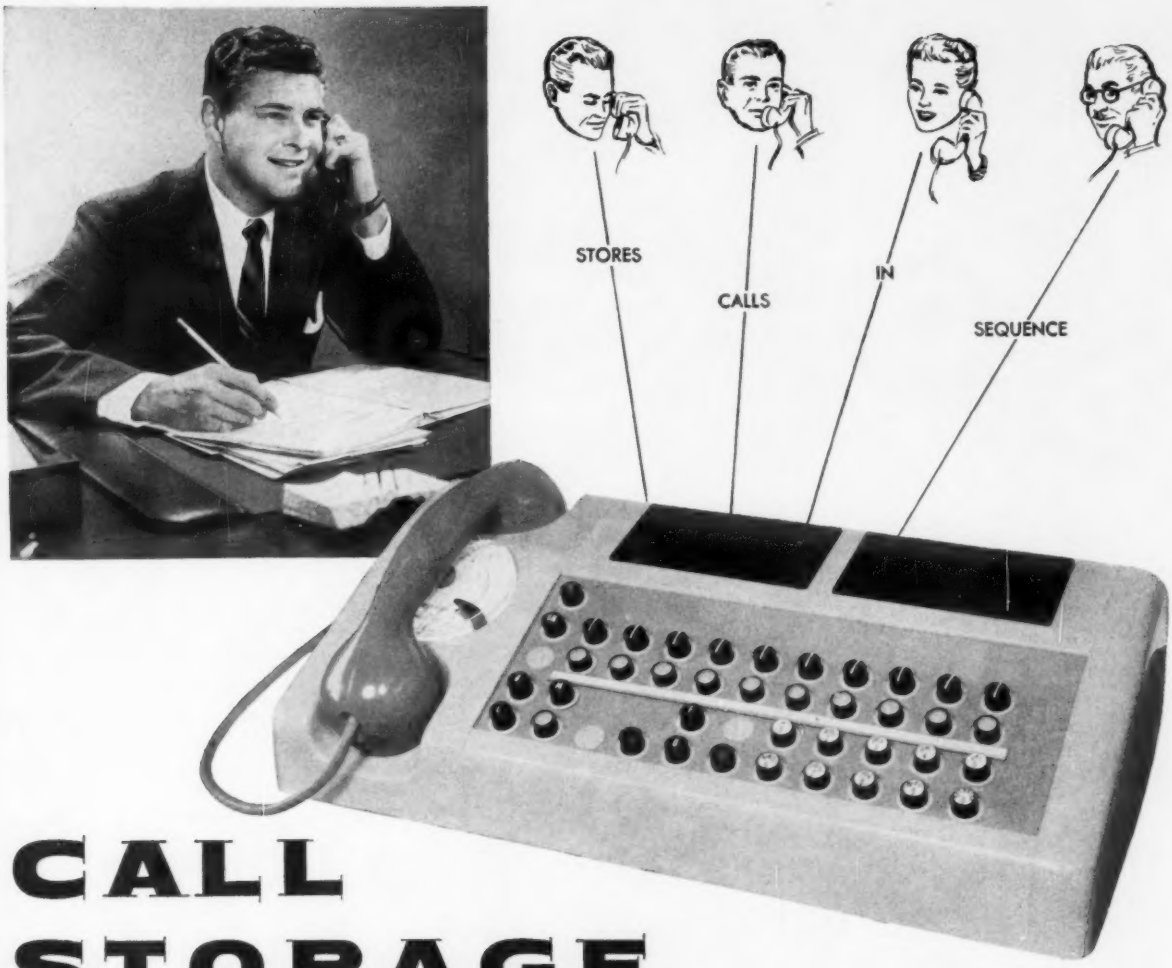

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